



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Ely District Office
HC33 Box 33500 (702 N. Industrial Way)
Ely, Nevada 89301-9408
http://www.blm.gov/nv/st/en/fo/ely_field_office.html



FEB 29 2010

In Reply Refer to:
8560 (NVL00000)

Dear Interested Party:

Thank you for your interest in the Clover Mountain and Tunnel Spring Wilderness Management Plan and EA. These two areas are being addressed in a single management plan due to their proximity and similar issues. The Draft Wilderness Management Plan and EA are now available for public comment.

The Ely BLM is allowing 45 days to comment on the Wilderness Management Plan and EA starting March 1, 2010. To request a CD or hard copy of the draft Wilderness Management Plan and EA contact Dave Jacobson, Wilderness Planner, at 775-289-1873 or dave_jacobson@nv.blm.gov. The Draft Wilderness Management Plan and EA can also be found on the Ely, BLM website. http://www.blm.gov/nv/st/en/fo/ely_field_office.html

All comments are to be sent directly to the District Manager for consideration and use in processing the final plan and environmental assessment at the address above by close of business **April 14, 2010.**

Sincerely,

Rosemary Thomas
District Manager
Ely District Office

**U.S. Department of the Interior
Bureau of Land Management**

**Environmental Assessment
DOI-BLM-NV-L000-2009-0007-EA
February 2, 2010**

Clover Mountains Wilderness

Tunnel Spring Wilderness



Clover Mountains Wilderness- Cottonwood Canyon Creek

**Proposed Wilderness Management Plan
And
Environmental Assessment**

U.S. Department of the Interior
Bureau of Land Management
Ely District Office
Phone: 1-775-289-1800
Fax: 1-775-289-1910



Table of Contents

INTRODUCTION	1
SCOPE OF THE WILDERNESS MANAGEMENT PLAN.....	1
WILDERNESS OVERVIEW.....	3
WILDERNESS CHARACTERISTICS.....	7
WILDERNESS SPECIFIC ISSUES	7
WILDERNESS MANAGEMENT GOALS AND OBJECTIVES.....	8
CURRENT SITUATIONS AND ASSUMPTIONS.....	11
MANAGEMENT STRATEGY	13
WILDERNESS MANAGEMENT ACTIONS	13
NOXIOUS AND NON-NATIVE INVASIVE WEEDS	14
RANGE	16
MANAGEMENT OF SMALL-SCALE SURFACE DISTURBANCES	21
MANAGEMENT AND DESIGNATION OF TRAILS	24
MANAGEMENT OF VEHICLE ACCESS POINTS AND DESIGNATION OF STAGING AREAS	25
SIGN PLAN	26
VEGETATION RESTORATION	27
WILDLIFE MANAGEMENT	30
<i>Wildlife Water Developments</i>	30
<i>Wildlife Relocation</i>	31
<i>Wildlife Damage Management</i>	31
HERD AREAS	32
FIRE MANAGEMENT OBJECTIVES AND GUIDELINES	32
<i>Fire Suppression Guidelines</i>	33
<i>Suppression Activity Damage</i>	34
<i>Emergency Stabilization and Rehabilitation Activities</i>	34
PROTECTION OF ARCHAEOLOGICAL RESOURCES AND HISTORIC PROPERTIES	38
GENERAL RECREATION ACTIVITY	40
ENVIRONMENTAL EDUCATION AND INTERPRETATION	42
COMMERCIAL USE RESTRICTIONS	43
LAW ENFORCEMENT	43
RESEARCH	44
WATER RIGHTS	44
STRUCTURES, INSTALLATIONS AND OTHER HUMAN EFFECTS OR DISTURBANCES	45
<i>Climate, Weather, and Water Monitoring Data Collection Devices</i>	46
MILITARY OPERATIONS	46
MONITORING PROGRAM.....	47
PLAN EVALUATION.....	51
PRELIMINARY ENVIRONMENTAL ASSESSMENT	54
BACKGROUND INFORMATION.....	55
DESCRIPTION OF THE PROPOSED ACTION AND THE NO ACTION	59
WILDERNESS MANAGEMENT PLAN ACTIONS	59
ADDITIONAL ACTION ALTERNATIVES	68
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES.....	68

INTRODUCTION.....	68
RESOURCES/CONCERNS CONSIDERED FOR ANALYSIS	69
MANDATORY ITEMS ANALYZED.....	71
FIRE MANAGEMENT	71
FISH AND WILDLIFE.....	73
GRAZING USES	79
INVASIVE NON-NATIVE PLANT SPECIES (INCLUDES NOXIOUS WEEDS).....	81
RECREATION USES.....	85
SPECIAL STATUS ANIMAL SPECIES.....	86
SPECIAL STATUS PLANT SPECIES	90
VEGETATION/SOILS/WATERSHED	92
WILDERNESS	94
CUMULATIVE IMPACTS	97
MONITORING PROGRAM.....	102
CONSULTATION AND COORDINATION	102
LIST OF PREPARERS	103
ACRONYMS AND ABBREVIATIONS.....	104
GLOSSARY	105
APPENDICES	108

Maps and Tables

MAP 1. OVERVIEW OF WILDERNESS AREAS.....	4
MAP 2. DOCUMENTED TAMARISK & RUSSIAN OLIVE LOCATIONS	17
MAP 3. RANGE ALLOTMENTS AND DEVELOPMENTS ASSOCIATED WITH TUNNEL SPRING WILDERNESS.....	19
MAP 4. RANGE ALLOTMENTS AND DEVELOPMENTS ASSOCIATED CLOVER MOUNTAINS WILDERNESS	20
MAP 5. SIGN & ACCESS POINT LOCATIONS	28
MAP 6. PONDEROSA PINE TREATMENT AREAS IN THE CLOVER MOUNTAINS WILDERNESS	29
MAP 7. FIRE HISTORY AND EMERGENCY STABILIZATION & REHABILITATION TREATMENTS	35
MAP 8: LOCATION OF WILDERNESS AREAS	55
MAP 9. FIRE MANAGEMENT UNITS IN WILDERNESS	74
MAP 10. FIRE REGIME CONDITION CLASS IN WILDERNESS.....	75
MAP 11. GEOGRAPHIC AREA FOR CUMMULATIVE EFFECTS	102
TABLE 1. RESOURCES/CONCERNS CONSIDERED FOR ANALYSIS.....	69
TABLE 2. FIRE MANAGEMENT UNITS WITHIN THE CLOVER MOUNTAINS AND TUNNEL SPRING WILDERNESS AREAS...	72
TABLE 3. GRAZING ALLOTMENTS WITHIN WILDERNESS	80
TABLE 4. NEVADA BLM SPECIAL STATUS FISH AND WILDLIFE SPECIES THAT DO OR MAY OCCUR IN WILDERNESS ...	87
TABLE 5. NEVADA BLM SPECIAL STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN WILDERNESS	90

Introduction

The United States Congress established the National Wilderness Preservation System to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States. Wilderness designation is intended to preserve and protect certain lands in their natural state. Only Congress, with Presidential approval, may designate lands as Wilderness. The Wilderness Act of 1964 defines wilderness characteristics, the uses of wilderness, and the activities prohibited within wilderness boundaries.

Wilderness areas provide a contrast to lands where human activities dominate the landscape. Wilderness areas are managed for the American people in a manner that will leave them unimpaired for future use and enjoyment as wilderness, for their protection, preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness.

Scope of the Wilderness Management Plan

This Wilderness Management Plan (WMP) provides the primary management direction for the Clover Mountains and Tunnel Spring Wilderness areas. Given their comparable natural resources and similar broad management issues, it is appropriate to incorporate the administration of the two areas into a single, ten-year plan.

Wilderness characteristics are cumulatively identified by the Wilderness Act of 1964 as untrammled (i.e., unrestrained, unhindered) by man, natural and undeveloped, having outstanding opportunities for solitude or primitive, unconfined forms of recreation, and the inclusion of supplementary values. This wilderness management plan preserves the areas' characteristics by:

- Identifying the conditions and opportunities for which the wilderness areas would be managed.
- Creating specific directives for managing resources and activities existing or occurring in wilderness.
- Identifying management needs outside of, and immediately adjacent to the wilderness areas; including signing, staging areas, and access points.

The WMP contains current comprehensive descriptions of the wilderness areas and proposed management actions, directives, and guidelines that relate to specific wilderness management categories. An Environmental Assessment follows the WMP, which fully describes and analyzes the potential impacts relating to proposed management actions, directives and considered alternatives.

Consistency with BLM and Other Land Use Plans

This Wilderness Management Plan is in conformance with the goals, objectives, and decisions analyzed within the scope of the Ely District Approved Resource Management Plan (2008), and is consistent with the goals, objectives, and decisions of Master Plan for Lincoln County Nevada (2007).

Compliance with Executive Orders, Laws, Regulations, and State Statutes

This Wilderness Management Plan is in compliance with the following:

- The Wilderness Act of 1964 (16 U.S.C. §§ 1131-1136, September 3, 1964, as amended 1978).
- The Federal Land Policy and Management Act of 1976 (43 U.S.C. §§ 1701-1782, October 21, 1976, as amended 1978, 1984, 1986, 1988, 1990-1992, 1994 and 1996).
- The Lincoln County Conservation, Recreation and Development Act of 2004 (Public Law 108-424).
- The National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321-4347, January 1, 1970, as amended 1975 and 1994).
- The Endangered Species Act of 1973 (16 U.S.C. §§ 1531-1544, December 28, 1973, as amended 1976-1982, 1984, and 1988).
- Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668d, June 8, 1940, as amended 1959, 1962, 1972, and 1978).
- Migratory Bird Treaty Act (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989).
- Executive Order 13186—Responsibilities of Federal Agencies to Protect Migratory Birds (2001).
- Management of Designated Wilderness Areas (43 CFR Part 6300).
- Recreation Management Restrictions: Occupancy Stay Limitation (43 CFR 8365.1-2(a) and Federal Register Notice NV-930-4333-02).
- Unlawful Manner of Camping Near Water Hole (Nevada Revised Statute 503.660).
- Executive Order 13112: Invasive Species (1999).
- Executive Order 13443: Facilitation of Hunting Heritage and Wildlife Conservation (2007).
- National Historic Preservation Act (Public Law 89-665; 16 U.S.C. 470 as amended through 2000).
- Federal Property and Administrative Services Act of 1949 (40 U.S.C. as amended through P.L. 106-580, Dec. 29, 2000).
- Archaeological Resources Protection Act of 1979, as amended (Public Law 96-95; 16 U.S.C. 470aa-mm).
- Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195).

Relationship to Policies and Guidelines

The Wilderness Management Plan is in conformance with the following guidelines, manuals, and handbooks:

- Management of Designated Wilderness Areas (BLM Manual 8560).
- Wilderness Management Plans (BLM Manual 8561).
- Grazing Guidelines (House Report No. 101-405, Appendix A).
- Wildlife Management Guidelines (House Report No. 101-405, Appendix B).
- BLM Emergency Stabilization and Rehabilitation Handbook H1742-1.

Wilderness Overview

The Clover Mountains and Tunnel Spring Wilderness Areas were added to the National Wilderness Preservation System by the Lincoln County Conservation, Recreation and Development Act of 2004 (Public Law 108-424, November 30, 2004; LCCRDA). The Clover Mountains encompass 85,784 acres ranging from 3,000-7,555 feet elevation, while Tunnel Spring encompasses 5,371 acres ranging from 5,000-6,700 feet elevation. The Bureau of Land Management, Ely District Office, has sole management responsibility for both areas (See Map 1, Page 4).

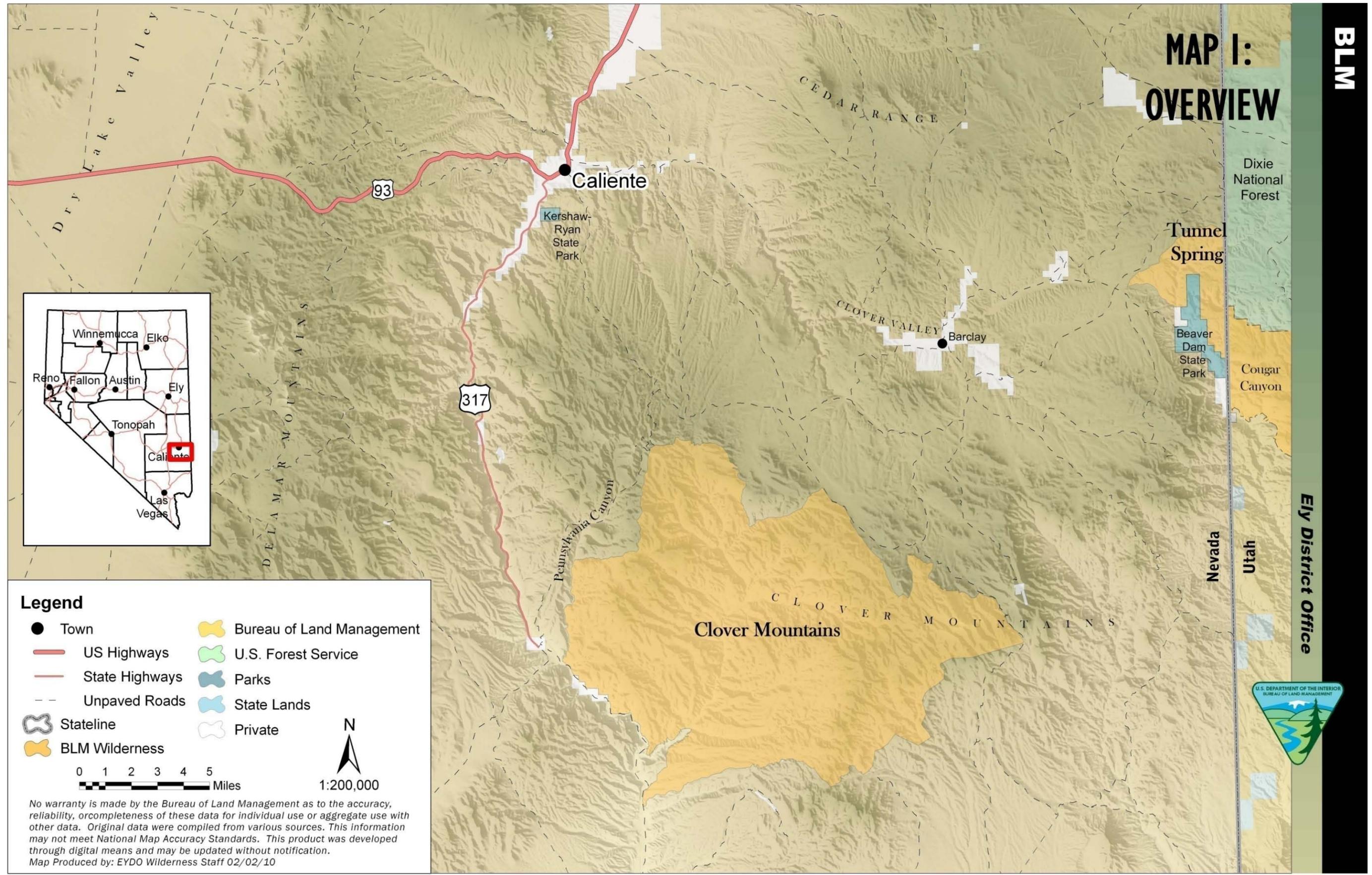
Clover Mountains Wilderness is located in southern Lincoln County approximately 12 miles south of Caliente, Nevada in the western Clover Mountains. Primary wilderness access from Caliente is by State Highway 317.

Tunnel Spring Wilderness is located in northeastern Lincoln County, Nevada. Primary wilderness access is six miles north of Caliente via the County Road leading to Beaver Dam State Park. Adjacent to Tunnel Spring Wilderness is Cougar Canyon Wilderness on the Utah side of the Utah – Nevada border.

Recreational activities in both wilderness areas include hiking, backpacking, camping, climbing, rock scrambling, wildlife viewing, hunting, and photography. Horseback riding is limited in Tunnel Spring because of rugged terrain.

The Clover Mountains Wilderness is an ancient volcanic center and geologic events have created rock outcrops of rhyolite in natural hues of pink, yellow, red, orange, and brown as well as twisting canyons and perennial waters. Upper elevations encompass small old-growth stands of ponderosa pine (*Pinus ponderosa*) and quaking aspen (*Populus tremuloides*), both of which are uncommon in this part of Nevada. Water birch (*Betula occidentalis*), Goodding's willow (*Salix gooddingii*), and other riparian vegetation thrive along Cottonwood Creek.

MAP I: OVERVIEW



Ely District Office



Legend

- Town
- US Highways
- State Highways
- - Unpaved Roads
- ⊕ Stateline
- ⊕ BLM Wilderness
- ⊕ Bureau of Land Management
- ⊕ U.S. Forest Service
- ⊕ Parks
- ⊕ State Lands
- ⊕ Private

0 1 2 3 4 5 Miles

1:200,000

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.
Map Produced by: EYDO Wilderness Staff 02/02/10

Along the Nevada-Utah border, the Tunnel Spring Wilderness is edged on the southern side by Beaver Dam State Park. Tunnel Springs Wilderness is a land of steep, mountainous canyons, long ridges, and rough drainages located at the head of Beaver Dam Wash. Primarily younger, undivided volcanic rocks characterize the landscape. Vegetation is largely singleleaf pinyon (*Pinus monophylla*), Utah juniper (*Juniperus osteosperma*), and multiple species of sagebrush (*Artemisia spp.*). Along the washes and streams, water birch (*Betula occidentalis*), Goodding's willow (*Salix gooddingii*), and other riparian vegetation grows.

Examples of non-native invasive plant species include saltcedar (*Tamarix spp.*), a designated noxious weed, Russian olive (*Elaeagnus angustifolia L.*), and annual grasses red brome (*Bromus madritensis rubens*) and cheatgrass (*Bromus tectorum L.*).



Clover Mountains: Joshua Trees and cactus

Wildlife species characteristic of the Great Basin, and to a degree, the Mojave Desert, are supported by the diverse habitat types found in these areas. Approximately 66% of Clover Mountains is characterized by the Central Basin and Range Ecoregion (Great Basin) with the remaining 34% by the Mojave Basin and Range Ecoregion (Mojave Desert). Tunnel Spring is entirely within the Central Basin and Range Ecoregion (Great Basin). Ecoregions are large areas of similar climate where ecosystems persist in

predictable patterns. Common species may include mule deer (*Odocoileus hemionus*), mountain lion (*Puma concolor*), turkey vulture (*Cathartes aura*), prairie falcon (*Falco mexicanus*), golden eagle (*Aquila chrysaetos*), red-tailed hawk (*Buteo jamaicensis*), and an diverse array of small mammals and birds. No federally listed species are known to occur, though several BLM and state sensitive species are known or are likely to occur. There are no existing wildlife water developments within either wilderness.

Fire was historically an infrequent natural occurrence in scrub-dominated vegetation ecological systems. However, the presence of introduced non-native annual grasses, red brome or cheatgrass, depending on elevation, has changed the natural fire cycle by yielding abundant fine fuel. Fires can carry through this fuel burning native vegetation, resetting the area back to an early seral stage. No recent fires have been documented in the Tunnel Spring Wilderness. However, in the Clover Mountains Wilderness 23,005 acres were burned in 2005 and 3,634 in 2006. As a result 11,871 acres have undergone Emergency Stabilization and Rehabilitation (ES & R) vegetation treatments. Due to dry years since the treatments, success has been limited thus far.

Active grazing permits existed at the time of wilderness designation and are authorized to continue under the direction of the Congressional Grazing Guidelines. Presently, Clover Mountains Wilderness is overlain by five grazing allotments and Tunnel Spring Wilderness with two allotments; however the majority (66%) of this wilderness area has been previously closed to grazing. Several range developments (fences, developed springs, and corrals) currently exist for the maintenance and support of livestock grazing operations. Herd management status for the Clover Mountains

Herd Management Area (HMA) has been dropped and all horses are to be removed (BLM 2008). Tunnel Spring does not overlap with any HMA.

Cultural resources within the Clover Mountains Wilderness include petroglyphs, pictographs, and a historic cabin in Cottonwood Creek. No cultural resources have been documented in Tunnel Spring to date.

Human-caused disturbances in the form of vehicle routes existed within these areas at the time of wilderness designation. These routes have been decommissioned (motorized vehicle use is no longer allowed) and initially rehabilitated (an effort to return decommissioned route to vegetative state). Total for the Clover Mountains is 3.75 miles and Tunnel Spring is 0.25 miles. There are a couple cherry stem routes (a road that is excluded from the designated wilderness by a non-wilderness corridor having designated wilderness on both sides) associated with Clover Mountains wilderness area; none in Tunnel Spring.

While no private inholdings are present, several private parcels are either adjacent or in close proximity to each of the areas. Additionally, an active Union Pacific Railroad line and right of way is located near the southwest boundary of Clover Mountains Wilderness.

A more comprehensive description of the environment is incorporated into the Affected Environment section in the environmental assessment following the plan.

Wilderness Characteristics

The Wilderness Act of 1964 defines wilderness and mandates that the primary management direction is to preserve wilderness character. Although wilderness character is a complex idea and was not explicitly defined in the Wilderness Act, wilderness characteristics are commonly defined as:

- **Untrammeled** — area is unhindered and free from modern human control or manipulation.
- **Natural** — area appears to have been primarily affected by the forces of nature.
- **Undeveloped** — area is essentially without permanent improvements or human occupation and retains its primeval character.
- **Outstanding opportunities for solitude or a primitive and unconfined type of recreation** — area provides outstanding opportunities for people to experience solitude or primeval and unrestricted recreation, including the values associated with physical and mental inspiration and challenge.

Additionally, wilderness areas may contain ecological, geological, or other features of scientific, educational, scenic, or historical value. However, these supplemental values or characteristics need not be present for an area to meet the definition of wilderness.

Wilderness Specific Issues

This WMP was prepared to address issues that were identified through internal and public scoping. Internal scoping was done via meetings and written communications with BLM resource specialists. Public scoping was conducted in the form of meetings, written letters, email, and by BLM staff. Public scoping meetings were held on February 25, 2009 in Mesquite, Nevada and February 26, and April 21, 2009 in Caliente, Nevada. All issues and concerns were considered during the development of the alternatives described in the environmental assessment following this plan. Relevant issues addressed in this WMP that were identified through scoping relate to wilderness characteristics and are as follows:

Protecting and enhancing the undeveloped and natural appearance of the wilderness areas

- Lack of regeneration of some ponderosa pine stands in the Clover Mountains Wilderness.
- Not all springs or wet areas are represented on maps.
- There are still wild horses in these areas, especially around springs.

Preserving naturalness, primeval character and influence of the wilderness areas

- Management of fire, including suppression levels and post-fire vegetation restoration.
- Management of noxious and invasive plant species; in particular, cheatgrass, red brome, Russian olive, and Tamarisk (*Tamarix spp.*), including Tamarisk leaf beetle (*Diorhabda elongate*) population in the Clover Mountains Wilderness.
- Potential effects to southwestern willow flycatcher (*Empidonax traillii extimus*) habitat in Lower Meadow Valley Wash Area of Critical Environmental Concern (ACEC).

Management of special non-wilderness land uses allowed by the Wilderness Act

- Continuation of livestock grazing activities, access to, and maintenance of range developments.

Managing supplemental values of the wilderness

- Using monitoring to adjust management actions, including water monitoring.

Certain issues identified during public scoping are already addressed in existing planning documents or policy, and are not within the scope of this Plan. They are listed below:

- Protection of Dark Skies— This Plan does not have any administrative or legal authority to address lighting constraints for developments or projects in surrounding areas. County/City planning commissions would have this authority.
- Concerns over water extraction in the surrounding areas affecting spring and stream flow within wilderness.

Wilderness Management Goals and Objectives

Managing wilderness is guided by four primary goals defined in Appendix 1 of the BLM wilderness management planning manual (BLM Manual 8561). These goals, along with related laws and BLM policies, provide general management direction and are refined into specific objectives. Objectives are statements of desired conditions stemming from current situations and assumptions about the future. Management action(s) are based on these objectives. This section outlines the goals and objectives that guide this 10-year wilderness management plan.

Goal 1

Provide for the long-term protection and preservation of the areas' wilderness character under a principle of non-degradation. The areas' natural condition, opportunities for solitude, opportunities for primitive and unconfined types of recreation, and any ecological, geological, or other features of scientific, educational, scenic, or historic value present will be managed so to remain unimpaired.



Tunnel Spring Wilderness

Objectives

- Preserve the primeval character and influence of the wilderness by allowing fire as a natural process of disturbance and succession where the ecosystem is fire-dependent; manage fire where it threatens wilderness character and/or natural ecological conditions or processes; prevent fire where it threatens human life or property.
- Manage wildlife habitat to support healthy, viable, and naturally distributed wildlife populations in an effort to retain the areas' natural and primeval character.

- Maintain native plant distribution and abundance through the reduction of noxious and non-native invasive species in an effort to retain the areas' natural and primeval character.
- Protect and preserve the outstanding archaeological and historic resources of these areas while allowing for visitor enjoyment of those resources.

Goal 2

To manage the wilderness areas for the use and enjoyment of visitors in a manner that would leave the areas unimpaired for future use and enjoyment as wilderness. The wilderness resource would be dominant in all management decisions where a choice must be made between preservation of wilderness character and visitor use.

Objectives

- Provide for the use and enjoyment of the wilderness areas while maintaining outstanding opportunities for primitive recreation, including solitude, through minimal visitor use regulations and minimal on-the-ground developments.
- Utilize education and interpretation as a proactive approach in managing visitor activities that may impact preservation of the wilderness character.
- Prevent unauthorized motorized vehicle travel through the management of vehicle access points.

Goal 3

To manage the wilderness areas using the minimum tool, equipment, structure or method necessary to successfully and safely accomplish the objective. The chosen tool, equipment, structure or method should be the one that least degrades wilderness values temporarily or permanently. Management would seek to preserve spontaneity of use and freedom from regulation to the greatest extent possible.

Objective

- Implement proposed actions as necessary to meet minimum requirements for the administration of the areas as wilderness and to have the least impact to wilderness characteristics.

Goal 4

To manage non-conforming but accepted uses permitted by the Wilderness Act and subsequent laws in a manner that would prevent unnecessary or undue degradation of the areas' wilderness character. Non-conforming uses are the exception rather than the rule; therefore, emphasis is placed on maintaining wilderness character.

Objectives

- Allow for special provision land uses determined by the Wilderness Act or Lincoln County Conservation, Recreation and Development Act while minimizing developments, degradation to naturalness, and other impacts to wilderness resources.
- Maintain or enhance the natural appearance of the wilderness areas by removing unnecessary facilities and minimizing or reclaiming human-caused surface disturbances.
- Assess potential commercial services of the wilderness areas for their economic importance and prevent negative impacts on wilderness characteristics.

Current Situations and Assumptions

Current local conditions and expectations were identified before developing management actions. Inventory, monitoring, and research are important aspects to meet the objectives of this plan.

Current Situation

No federally listed species are present; however, there are several BLM special status species present. Both areas contain mule deer habitat and the Clover Mountains contains potential desert bighorn sheep habitat.

Assumption: One aspect of preserving the wilderness areas' natural and primeval character involves the maintenance of healthy, viable, and naturally distributed wildlife populations and their habitat. It may be necessary to implement wildlife management activities to prevent degradation or enhance wilderness characteristics.

Current Situation

Preservation of the natural character of these wilderness areas is currently affected by areas of invasive and noxious weeds such as red brome, cheat grass, Russian olive and Tamarisk. The presence of introduced annual grasses has increased the abundance of fine fuels. In 2005, fires burned significant acreage in the Clover Mountains and portions of the burned areas were subsequently reseeded to aid in post-fire rehabilitation.

Assumption: Further establishment of invasive and noxious weeds may occur and could further impair ecological integrity throughout the system and thus degrade wilderness character. Disruption of native vegetation could further alter natural fire regimes.

Current Situation

Current trammeling activities include active livestock grazing allotments and the presence of authorized allotment fences developed springs, and corrals.

Assumption: Livestock grazing and the necessary facilities and activities to support a livestock grazing program are expected to continue.

Current Situation

The Clover Mountains is relatively close to Las Vegas, Nevada, which is one of the fastest growing urban areas in the country. Coyote Springs is an approved master planned community situated approximately 35 miles to the southwest of the Clover Mountains. Beaver Dam State Park borders Tunnel Spring with visitor facilities seasonally closed. Cedar City, Utah is within 2 hours of access to the eastern border of Tunnel Spring by way of Pine Park Campground (11 primitive sites). Cougar Canyon Wilderness in Utah is contiguous with the southern portion of Tunnel Spring Wilderness and it is continuous with Slaughter Creek and Doc's Pass Wilderness areas in Utah. At present, visitor use is minimal in both Nevada wilderness areas and opportunities for solitude and primitive and unconfined forms of recreation are considerable.

Assumption: Populations in the Las Vegas Valley, Cedar City, and Coyote Springs areas will continue to grow; therefore wilderness visitor use may increase. Also, wilderness designation in Nevada and Utah has the potential to draw more attention to these areas and thereby increase visitation in certain portions of the wilderness (e.g., riparian areas).

Current Situation

A few former four-wheel drive vehicle routes exist in both areas. These routes have been decommissioned and have undergone initial rehabilitation. Only one short cherry stem route exists in Clover Mountains Wilderness. There have been incidences of unauthorized vehicle incursions into the wilderness areas.

Assumption: Unauthorized vehicle use may continue due to urban expansion and proximity possibly leading to the degradation of wilderness characteristics.

Current Situation

Nellis Air Force Base frequently conducts training exercises in the airspace above wilderness. These exercises have resulted in the release of flares, aircraft parts, and non-operational ordinances into wilderness. Additionally, training exercises have occasionally resulted in emergency situations including downed aircraft or pilot and some classes of live ordinance.

Assumption: Military operations will continue to occur in the airspace above wilderness and may result in the need for management of both non-emergency incidents and emergency situations.



Ponderosa on Clover Mountains Wilderness (photo circa 1993)

Management Strategy

The management strategy for the Clover Mountains and Tunnel Spring Wilderness areas is to maintain or improve the natural, near-pristine conditions present today while rehabilitating existing and future human-caused disturbances.

Wilderness Management Actions

Wilderness management actions for these areas are based on national wilderness goals, wilderness management objectives, current situation and assumptions, and wilderness-specific issues that were identified through internal and external scoping. Except for site-specific proposed actions, management actions are the same for both areas because of similar broad management issues.

Resource programs, such as Wild Horse and Burro, Range, Fire Management, Noxious and Invasive Weed Management, individually address the management goals and activity

plans of their respective programs. This WMP considers all resources involved in the wilderness areas as well as associated management issues and concerns as they relate to the wilderness resource. Non-wilderness resource programs have been evaluated to ensure conformity with wilderness management goals and objectives. Management actions are described on the following pages. While all of the management actions provide wilderness specific direction, several outline site-specific management actions.

Any ground disturbing activities associated with the following actions would implement Best Management Practices outlined in the BLM Interim Management Guidelines regarding all identified resources. All actions are supplemental to and consistent with wilderness laws, regulations, and policies, which must be further consulted in the event of unforeseen issues.

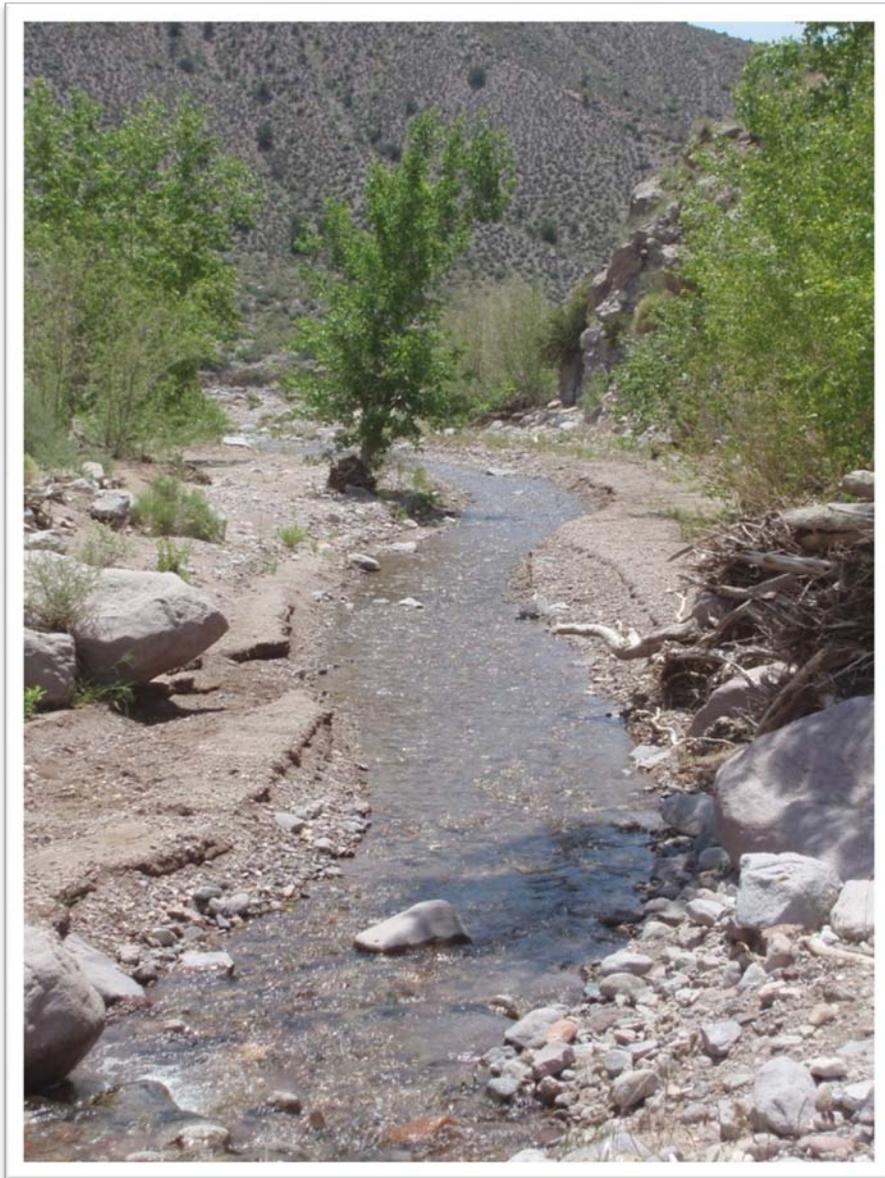
Noxious and Non-Native Invasive Weeds

The management ideal is to sustain only native species in wilderness. Noxious weeds in Nevada are classified by the Nevada Department of Agriculture and the Plant Protection Act (2000) administered by the United States Department of Agriculture's Animal and Plant Health Inspection Service (USDA-APHIS). Current noxious and invasive weed infestations include, but may not be limited to: red brome (invasive), cheatgrass (invasive), Russian olive (invasive in Nevada), and Tamarisk (noxious, category C). The potential exists for further infestations of these species, and others, coming from surrounding areas. In particular, the Union Pacific railroad right of way corridor that runs along the southwest boundary of Clover Mountains Wilderness is infested with multiple noxious weed species. Different management techniques may be required for each non-native, invasive species based on effectiveness as determined by plant biology, minimum tool requirements, and impact to the wilderness resource.

When noxious and invasive weeds are found, emphasis will be placed on controlling small infestations with the potential to spread and displace native plants. Treatments for large infestations (defined by the BLM Ely District Weeds Coordinator) will be considered separately. Seeding and transplant projects will follow guidelines presented in the Emergency Stabilization and Rehabilitation section (Page 34). BLM Ely District weed management protocols will guide the use of herbicide treatments. Treatments will be prioritized in the following order, though it is likely that treatment combinations would be necessary in some situations:

1. Manual removal with hand tools if weeds could be controlled or eradicated without causing re-sprouting, without soil disturbance leading to expansion of noxious or non-native invasive species, and where infestations are of a size manageable by hand crews.
2. Herbicides applied by backpack and pack stock equipment, where manual removal is not effective.

3. Biological control agents approved by the Animal and Plant Health Inspection Service where infestations are of such size that eradication by manual removal or herbicides is not feasible. Current possibilities consist of a stem-boring weevil for Dalmatian toadflax.
4. Herbicides applied aurally or with motorized equipment, where control impacts are quickly and readily rehabilitated and where the infestation is of such size that herbicide cannot be effectively applied without motorized equipment.



Clover Mountains Wilderness

5. Reseeding treated areas preferably with native species of local genetic stock following guidelines outlined under the Emergency Stabilization and Rehabilitation section (See Page 34).
6. Alternative treatments, such as targeted grazing by livestock, would be considered.

Site-Specific Actions

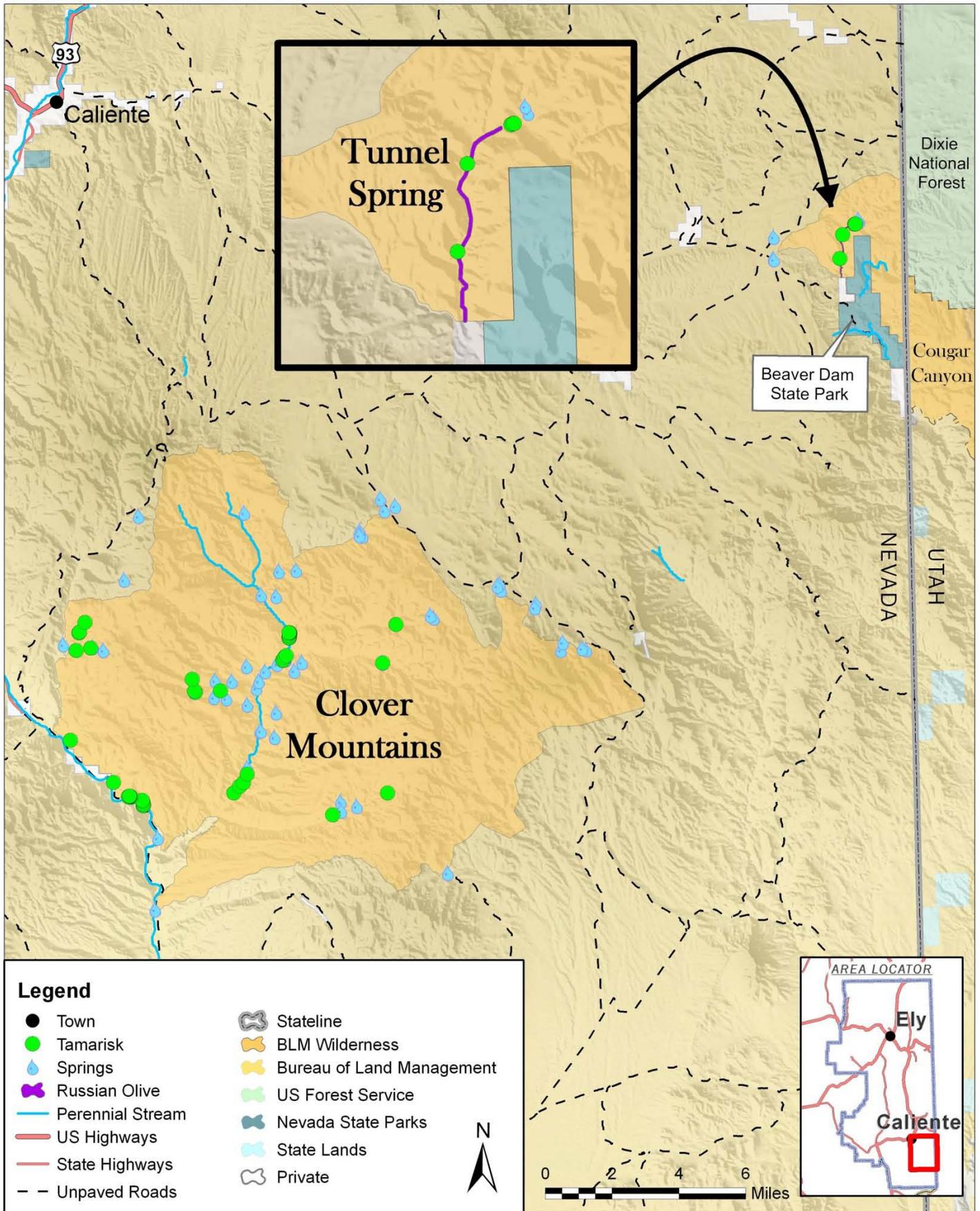
There are 43 documented infestations of Tamarisk in the Clover Mountains and five in Tunnel Spring Wilderness areas (See Map 2 on the following page). At the mouth of Cottonwood Canyon, in Meadow Valley Wash, there is a population of the Tamarisk leaf beetle, an effective biological control agent that has been released throughout the west. However, the release in this area was not approved by BLM or U.S. Fish and Wildlife Service. Therefore, treatment options for Tamarisk within both wilderness areas would be treated using either the cut-stump, low volume basal bark, or low volume foliar application methods. Treatment details are located in Appendix A.

Within the Headwaters Wash drainage of the Tunnel Springs Wilderness there are several large infestations of Russian olive. Approximately 2.3 miles of the wash is infested with about 20 acres of Russian olive. The minimum tool analysis determined that hand-crews using cross-cut saws would best preserve wilderness character, while having less auditory impact on opportunities for solitude. Cutting of the trees would be followed by a herbicide treatment of the stump. The slash will be scattered across the treatment area to create a more natural landscape. Herbicide treatments would include the cut-stump, low volume basal bark, or low volume foliar application methods, the details of which are listed in Appendix A. Methods for biological control currently do not exist for Russian olive but could be considered in the future if methods become available and are approved for use.

Range

Although grazing is considered a trammeling activity, the Wilderness Act explicitly allows this activity to occur where it existed prior to wilderness designation. The BLM Manual 8560 (Management of Designated Wilderness Areas) also states, “Grazing of livestock, where established prior to the effective date of the Act designating the area as wilderness, must be permitted to continue subject to this policy and the BLM grazing regulations 43 CFR 4100.”

MAP 2: DOCUMENTED TAMARISK & RUSSIAN OLIVE LOCATIONS



Grazing will continue under federal regulations to meet the Mojave – Southern Great Basin Resource Advisory Council Standards. Planning related to grazing operations will be guided by the Congressional Grazing Guidelines (House Report 105-405 Appendix A, 1990) and the BLM Manual 8560 (Management of Designated Wilderness Areas).

Activities and the necessary facilities used to support livestock grazing will be permitted to continue in wilderness. The following excerpt from the Congressional Grazing Guidelines (House Report 101-405, 1990) provides direction for facilities maintenance and use of motorized equipment in wilderness:

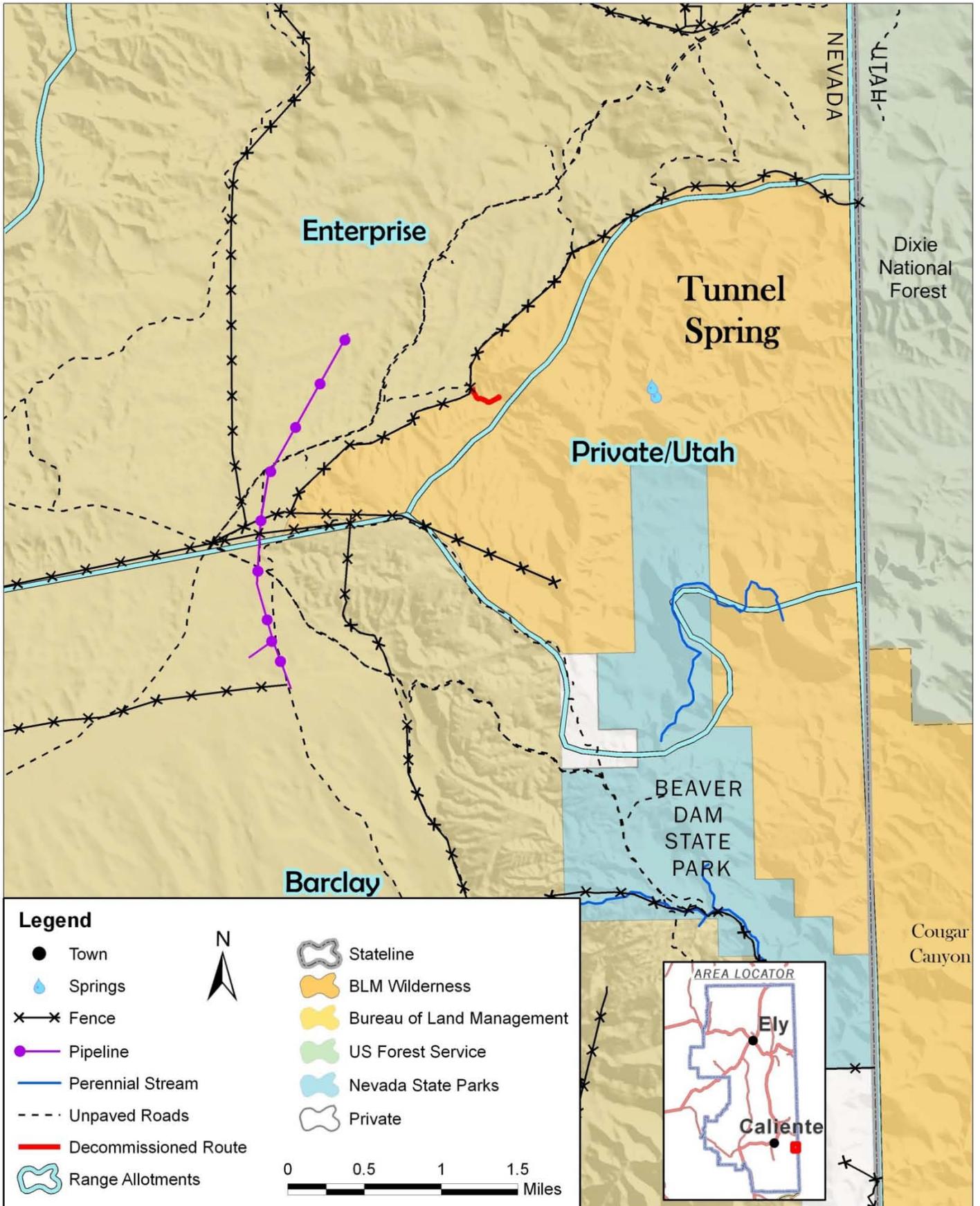
The maintenance of supporting facilities, existing in an area prior to its classification as wilderness (including fences, line cabins, water wells and lines, stock tanks, etc.) is permissible in wilderness. Where practical alternatives do not exist, maintenance or other activities may be accomplished through the occasional use of motorized equipment. . . . Such occasional use of motorized equipment should be expressly authorized in the grazing permits for the area involved. The use of motorized equipment should be based on a rule of practical necessity and reasonableness. . . . Moreover, under the rule of reasonableness, occasional use of motorized equipment should be permitted where practical alternatives are not available and such use would not have a significant adverse impact to the natural environment. Such motorized equipment uses will normally only be permitted in those portions of a wilderness area where they had occurred prior to the area's designation as wilderness or are established by prior agreement.

At this time, there are 3 fences (2.3 miles) that extend into the Tunnel Spring Wilderness and 12 fences (11.9 miles) in the Clover Mountains Wilderness. The Clover Mountains Wilderness has two corrals and two developed springs, while Tunnel Spring Wilderness has two developed springs. Across the 8 allotments there are 12 permittees (Private/Utah allotment is closed). See Maps 3 – 4 on the following pages.

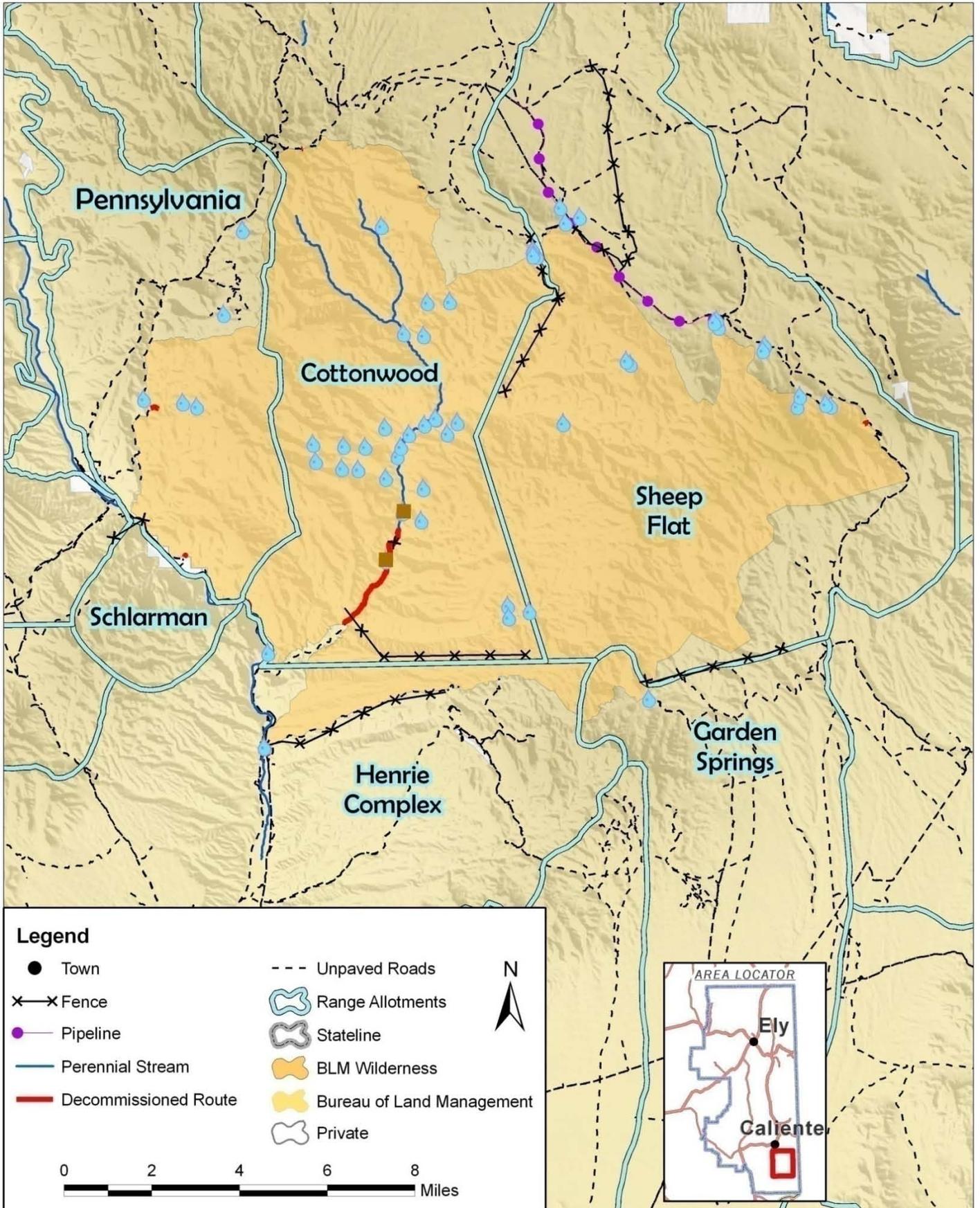
Current known range developments, as well as any discovered in the future, may be kept and maintained. Developments would be removed if deemed unnecessary by the BLM and the permittee following periodic evaluations or when there is a grazing permit renewal or transfer. The installation of new range developments is allowed in accordance with the Congressional Grazing Guidelines and pending project-specific National Environmental Policy Act (NEPA) analysis.

Range developments that appear to have been abandoned will receive an administrative record review and additional field reconnaissance in order to determine usage. The assigned BLM range specialist and archaeologist will be consulted to determine if historical or cultural designation is warranted. If it is determined, after consultation with the permittee, that a development is abandoned and not of historical or cultural value, it would be removed by BLM personnel or authorized volunteers. All projects involving ground disturbing activities will be subject to Section 106 consultation. Range developments for which questions of activity exist will be evaluated during the livestock operators' term permit renewal process.

MAP 3: RANGE ALLOTMENTS & DEVELOPMENTS ASSOCIATED WITH TUNNEL SPRINGS



MAP 4: RANGE ALLOTMENTS & DEVELOPMENTS ASSOCIATED WITH CLOVER MOUNTAINS



Routine livestock management activities and maintenance of supporting facilities (e.g. small salt drops and fence repairs) would be accomplished by foot or horseback as needed. Motorized vehicles may be authorized for major maintenance when transporting equipment or parts which cannot be accomplished by foot or pack stock. Specific maintenance requirements and schedules will be established by the permittee, range specialist, and wilderness specialist during permit renewal and will be stated as a term or condition of the grazing permit.

Though none are currently identified in the plan, should the need for administrative access routes be determined in the future, the following would apply. Approved motorized access would be confined to established administrative access routes. These would be managed for limited use by the permittee. A gate or bollard, signed as administrative access, may be installed at the beginning of selected administrative access routes to prevent unauthorized vehicle use. The permittees and BLM staff would maintain access keys. Administrative access routes would not be decommissioned (returned to a natural, vegetated state) and they may be maintained on a case-by-case basis in order to provide reasonable access for permittees.

In the case of an emergency, such as rescuing sick animals or placement of feed, the permittee may be authorized to use motorized vehicles in addition to their scheduled range development maintenance and livestock management access, provided the permittee notifies the BLM at the onset of the emergency or immediately thereafter. This would be stated as a term or condition of the grazing permit.

Site Specific Actions

There are no current actions regarding range at this time. However, maintenance schedules for existing range developments will be determined in the Term Permit Renewal process, and accompanying NEPA analysis.

Management of Small-Scale Surface Disturbances

Small-scale disturbances fall into two categories with common characteristics: small-site disturbances including abandoned developments, mining claims, and dispersed campsites; and linear disturbances created by motorized vehicle traffic that are largely denuded of vegetation. The Wilderness Disturbance Reclamation Environmental Assessment (EA) (NV-040-05-010), as well as the EA associated with this plan, may be referenced for rehabilitation following decommissioning of former vehicle routes and rehabilitating small-site disturbances.

All reclamation activities will be in accordance with the 2008 Ely District Approved Resource Management Plan's Best Management Practices (Appendix A, Section 1). Work will be completed by BLM staff, contractors, and volunteers. All vehicles will be limited to designated and existing roads outside of wilderness. All actions in wilderness will be conducted with non-motorized equipment and non-mechanized transport (with the exception of wheelbarrows for moving heavy objects). Actions will include and generally be conducted in the following order as needed:

1. **Decompaction:** Working the top few inches of the entire disturbed surface to relieve soil compaction. This action would be completed with the use of non-motorized hand tools (soil spades, spading forks, McLeod rakes, pulaskis, shovels, horse-drawn implements, etc.).
2. **Scarifying/pitting:** Loosening and texturizing the impacted, disturbed surface in random locations to better capture water, organic debris, and wind-blown seeds, thereby stimulating natural revegetation. This would be done with non-motorized hand tools.
3. **Recontouring:** Reconfiguring/shaping the route or area to blend it with the adjacent, relatively undisturbed terrain. This would involve the creation of small hummocks and banks, where appropriate, to mimic the surrounding landscape. Berms would be pulled in and the soil distributed across the disturbed surface. Vehicle tracks in sandy washes would be raked. This would lessen visual contrasts and provide a surface for natural revegetation. This action would be completed with non-motorized hand tools.
4. **Vertical mulching:** Dead and down vegetation is "planted" to obscure the visible portions of the disturbance. Additional dead vegetation, rock material and other organic matter may be distributed over the worked surface to decrease visual contrasts, create sheltered sites to aid in natural revegetation, and add organic debris. Dead and down vegetation and other materials would be gathered by hand from areas near to the disturbances.
5. **Erosion control:** Placing sterile weed-free straw bales or creating light terracing/berms to reduce erosion and create barriers to vehicles on steep slopes. This is especially effective on hill climbs. The straw bales break down over time and provide additional organic debris to the reclamation site. Bales would be brought in by hand or horseback to the worksite.
6. **Desert varnish colorant:** Spraying disturbed rock surfaces to simulate the coloration of the surrounding desert varnish. Desert varnish colorants are chemical compounds comprised of manganese, salts and other ingredients used to simulate the natural desert varnish that occurs on rock surfaces in arid environments. This substance would be applied sparingly, with the use of a backpack sprayer, and only on disturbed rock surfaces that contrast sharply with the surrounding landscape.
7. **Vegetative restoration:** This would involve planting, transplanting and/or seeding as necessary to help stabilize soil, speed overall vegetative recovery and camouflage evidence of disturbances. All seed would be locally collected or native species scattered on reclaimed surfaces to accelerate natural revegetation. This action would be completed with non-motorized hand tools.

Monitoring will be performed to assess the need for additional rehabilitation work utilizing photo points that would be established at the time of rehabilitation and retaken annually thereafter. Repeat treatments would occur on a case-by-case basis.

Large surface disturbances, such as those that may be caused by heavy machinery, would be rehabilitated by the entity (e.g. individual, agency, or company) causing them. They would also be responsible for developing a rehabilitation plan and conducting any necessary environmental analysis.

Site-Specific Actions

Currently there are 3.75 miles of linear disturbance in the Clover Mountains Wilderness and 0.25 miles in the Tunnel Spring Wilderness totaling approximately 4 miles, which is approximately 4 acres of surface disturbance. All former vehicle routes, including future disturbances, will be rehabilitated over time. Based on monitoring results, repeat treatments may occur. These routes are displayed on Maps 3 - 4 (See Pages 19 - 20).

All standard operating procedures, mitigation measures, and conservation measures listed in the Record of Decision for the Wilderness Disturbance Reclamation Environmental Assessment, which was approved in June 2005, and Ely District Best Management Practices will be followed.



Aerial View of Tunnel Spring Wilderness

Management and Designation of Trails

Should trails be designated in the future, they would be marked on the ground at trailheads and/or staging areas and displayed on BLM wilderness and recreation maps. A cultural resource inventory of all designated trails would be completed. Visitors traveling off designated trails may create informal foot-worn hiking paths, sometimes referred to as social trails. These informal foot-worn paths may continue to be used by visitors. However, they would not be marked on the ground, displayed on BLM recreation maps or brochures, or routinely receive maintenance.

Monitoring for new foot-worn hiking paths will specifically occur in high use areas, at all vehicle access points, and near decommissioned routes. An inventory of new foot-worn hiking paths will be maintained and monitored for resource damage. Monitoring will identify paths with different levels of trampling, such as social trails to primitive camping areas, cut vegetation, or other evidence of use.

As new foot-worn paths are discovered, they would be evaluated for impacts to wilderness character (including cultural and biological resources) and the management objectives of this plan. When appropriate and where possible, new foot-worn hiking paths may be rehabilitated or retained (See the following “Trail Guidelines”). When a foot-worn hiking path is retained, it may be rerouted, improved, or maintained to follow designated trail guidelines as outlined below to make the trail compatible with protecting resources while preserving wilderness character. If not designated as a trail or retained as a foot-worn hiking path, new trails would be rehabilitated.

Trail Guidelines

Both designated trails and, when determined appropriate, informal foot-worn paths may be maintained or rerouted where they are causing or anticipated to cause damage to wilderness character. Examples for when trail maintenance or rerouting would occur include:

- Slopes greater than 15 percent, beyond which potential for excessive soil erosion possibly leading to trail deterioration is high. Very short, steep sections may be retained where reinforced with native rock to prevent soil erosion. Rolling dips or rock-enforced water bars would be utilized to reduce water caused soil erosion.
- Where trail braiding or multiple parallel routes exist or are beginning to occur, the most appropriate trail would be selected by improving its tread surface or trimming back vegetation. The alternate trail(s) would be obstructed and rehabilitated with rock or native vegetation.
- Maintenance would strive to limit trail width to 24 inches, but not exceed 36 inches, except for trail sections along precipices (where it may be wider for safety and horse use) or in washes. Width standards are applied to continuous segments longer than 50 feet. Tree limbs or fallen trees may be cleared within ten feet high and four feet to either side of trail (cutting limbs at trunk) or, where practical, minor trail relocation to avoid the tree.
- Trails may be rerouted to avoid damage to natural or cultural resources.



Tunnel Spring Wilderness

Site-Specific Actions

While no trails are being designated or identified under this plan, should trails be identified or constructed in these two wilderness areas in the future, the above parameters would apply.

Management of Vehicle Access Points and Designation of Staging Areas

Access points are defined as locations along wilderness boundaries where focused entry occurs. Over time, these and other areas used for parking along boundary roads may be impacted to the point at which improvements should be made in order to protect wilderness character. These access points and parking areas may be defined by creating vehicle turn-arounds at or before the wilderness boundary to help direct vehicles from continuing into wilderness. Vehicle turn-arounds would be limited to 0.5 acres, within a 100-foot boundary offset, and would not extend into wilderness.

Staging areas could be constructed when necessary to accommodate vehicle parking, visitation, and to protect wilderness character. The area of disturbance would be no more than 1 acre per staging area and would not extend into wilderness. Vehicle barriers could be constructed outside

of wilderness where natural obstacles are not adequate to prevent vehicles from crossing into wilderness. Implemented barriers could include the following:

- Wilderness sign, berm associated with turn-around, small rocks and/or vegetation placement or restoration.
- Large boulders moved by heavy equipment.
- Posts.
- Fences and/or gates.

Where feasible, cherry stem routes will be maintained in the condition that existed at the time of wilderness designation. Using a trail maintenance approach, the installation of water bars to control the flow of water, as opposed to blading or culvert installation, will be utilized.

Site-Specific Actions

Given that access points around these two areas existed at the time of designation, no additional construction or developments of sites is planned at this time. Map 5 (Page 28) shows the location of existing access points. Should visitation increase to where the need for additional access points or staging areas is required, the above parameters would be followed.

Sign Plan

The wilderness boundary will be identified by signs at key locations. These signs will be simple installations (e.g. carsonite posts) used to delineate the wilderness boundary from adjacent non-wilderness.

Directional signs, placed along minor routes and entrances to cherry stems, will direct visitors to wilderness access points (or staging areas if designated in the future). These signs will also help to both identify legal driving routes and eliminate illegal vehicle intrusions.

Key entrance signs will state the name of the wilderness, and will be placed where visitors are likely to come into contact with the wilderness boundary. Both directional and key entrance signs will be larger than the boundary markers.

Kiosks will be one or two-paneled information signs placed at staging areas (potentially designated in the future), access points, or major roads. These signs will provide regional and local information regarding wilderness, natural and cultural resources, regulatory information, and interpretation. These signs will direct visitor use away from sensitive resources. Additionally, certain kiosks may include visitor surveys with collection boxes. Signs will be installed to manage for changing needs.

Should trails be designated in the future primitive recreation would be preserved by not installing signs or posts along the trail in wilderness.

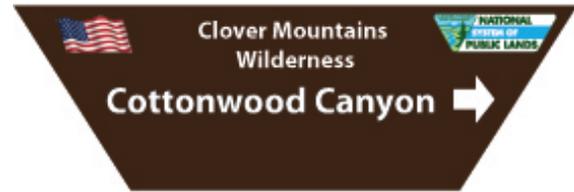
Site-Specific Actions

Key entrance signs will be installed at the following locations for the Clover Mountains Wilderness: near the corner of Kane Springs Road and the Carp Elgin Road near Elgin and on the eastern edge on a jeep trail near east pass (See Map 5 on the following page).

Information signs will be installed at the following locations in clover Mountains: One near the mouth of Cottonwood Canyon and one near Aspen Springs. For Tunnel Spring: one sign on the northern side near north corral (See Map 5 on the following page). The BLM document, Wilderness Signs and Information Kiosks (DOI-BLM-NV-L000-2009-003-CX), may be referenced for further details regarding signs.



Key Entrance Sign Example



Directional Sign Example



Wilderness Access Sign Example

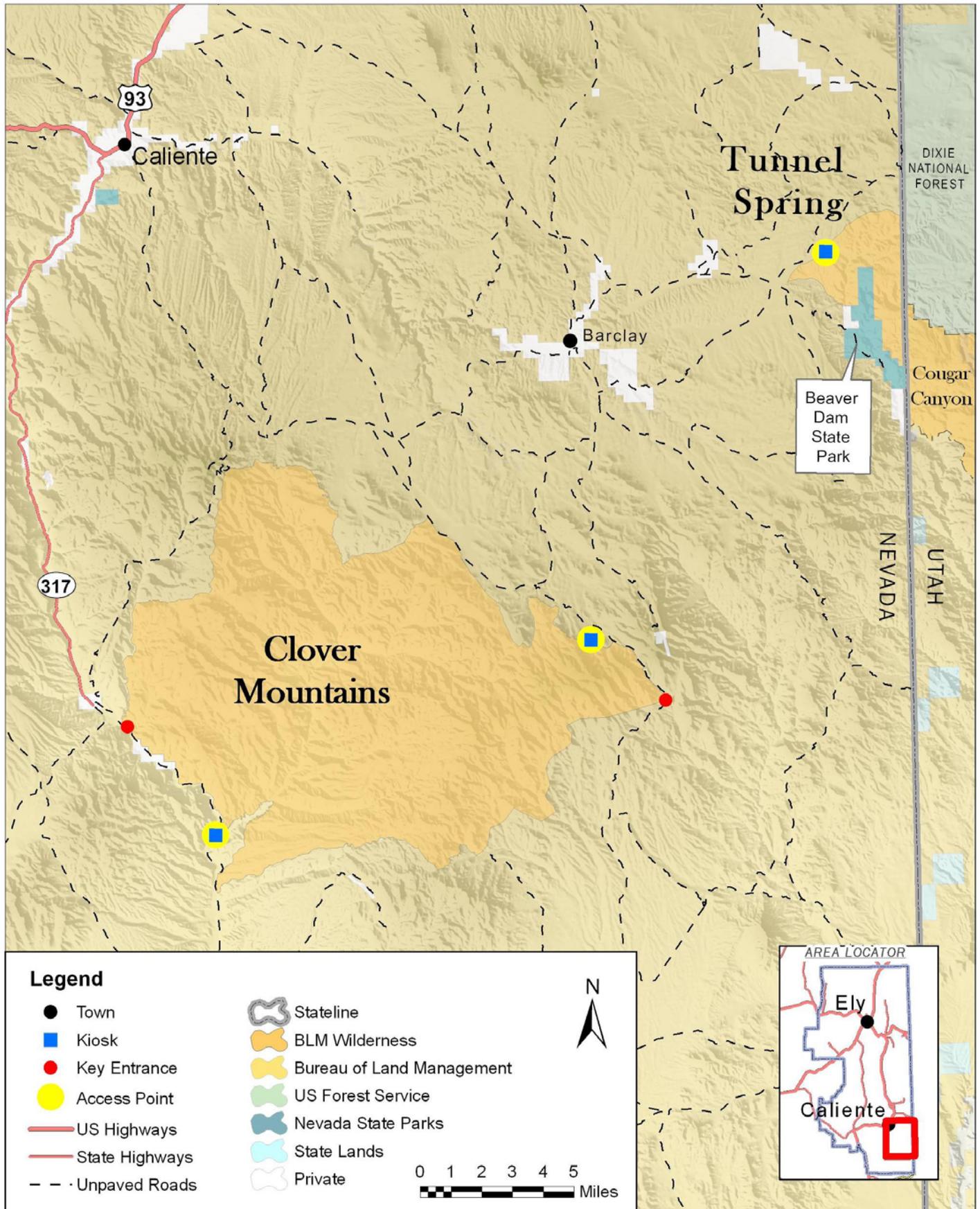
Vegetation Restoration

Projects that attempt to restore native vegetation or to enhance the resiliency of impaired vegetation communities with objectives that fall within the bounds of maintaining or improving wilderness character would be considered. This would be accomplished by addressing issues that challenge the ecosystem functions of the Great Basin and Mojave Deserts, such as the establishment of invasive annual grasses that has changed historic fire regimes. Temporary structures, such as exclosure fences, could be permitted when their presence would contribute to the long term enhancement of wilderness character.

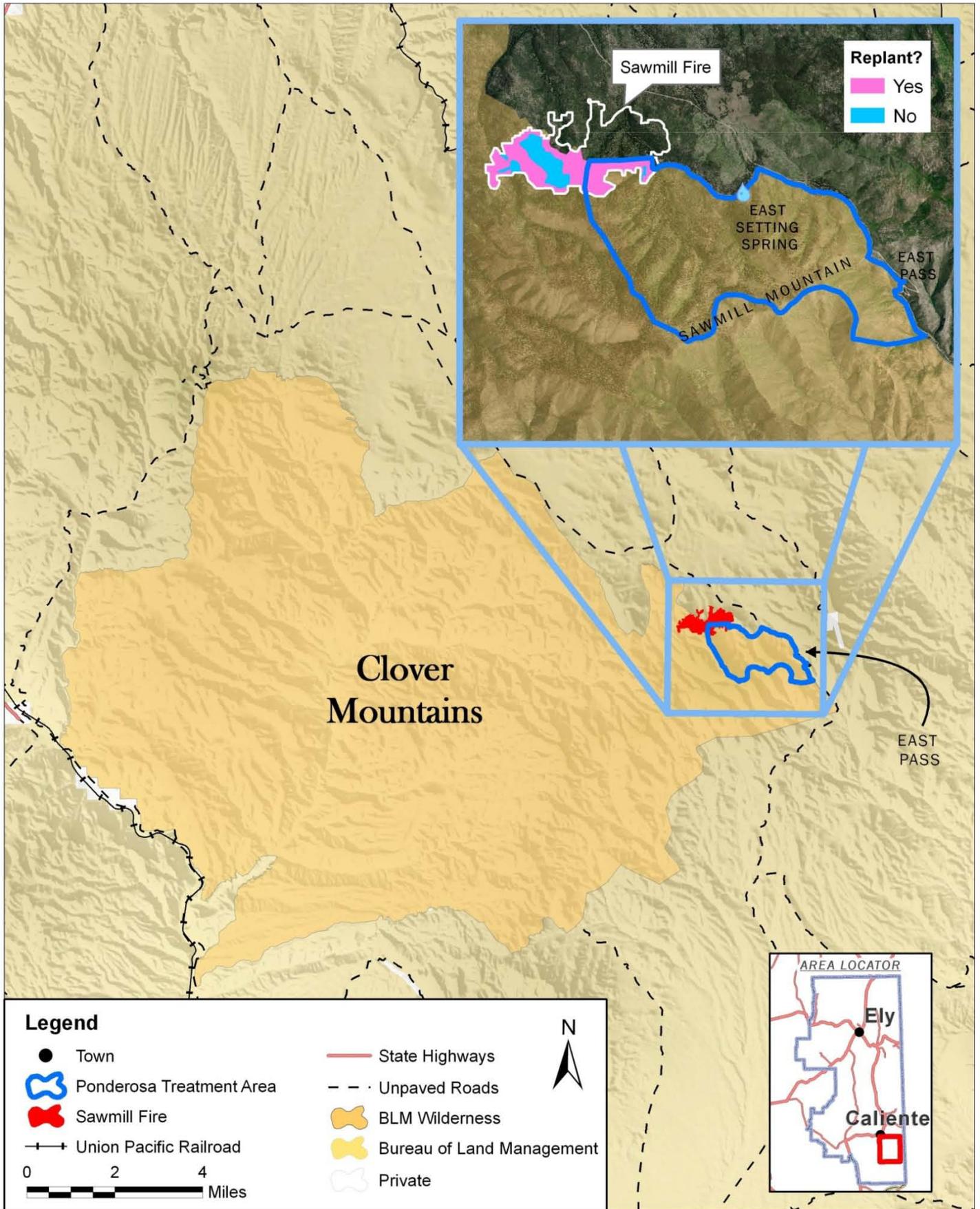
Site-specific Actions

A ponderosa pine restoration project is proposed for the Clover Mountains Wilderness across approximately 1,190 acres (See Map 6 on Page 29). Approximately 4 acres of the 1,190 will potentially be disturbed by field crews. Currently, this relict stand is not naturally regenerating in a self sustaining manner. The primary cause is historic fire suppression that has led to a thick understory that suppresses the ability of new seedlings to grow. Additionally, previous fires in this area have been hot crown fires that have killed many trees. Natural fire

MAP 5: SIGN AND ACCESS POINT LOCATIONS



MAP 6: PONDEROSA PINE TREATMENT AREAS



regimes within ponderosa pine communities are quick burning low heat ground fires that keep understory vegetation cleared thus allowing new ponderosa pine seedlings to reproduce successfully. The following points will guide the project:

- Field crews will walk in from a staging area located on the wilderness boundary road.
- Only hand tools such as shovels and hoedads will be used.
- Site preparation may be needed and will consist of clearing small amounts of brush with hand tools.
- Biodegradable planting mats and/or tree protectors may be needed in some areas.
- Seeds may need to be collected within wilderness in order to grow seedlings for planting if trees are not available.
- Monitoring of seedling growth will be conducted on foot or horseback.

Wildlife Management

Over the life of this Plan, it may be necessary to implement wildlife management activities within the three wilderness areas: 1) to mitigate loss of natural water sources, 2) to mitigate for wildlife habitat loss or fragmentation, 3) to reduce competition among wildlife, livestock, and wild horses, and 4) to reduce competition among wildlife species. Wildlife management activities within these designated wilderness areas will be conducted in conformance with the current (2003) and subsequent BLM-NDOW Memoranda of Understanding and guided by the LCCRDA (2004), which may include, on a case-by-case basis, the occasional and temporary use of motorized vehicles or tools. The following pertain to wildlife management activities.

Wildlife Water Developments

LCCRDA (2004) permits existing and future structures and facilities, including inspections and maintenance, for wildlife water development projects in wilderness when considered essential to preserve, enhance, or prevent degradation of wilderness character. Wildlife water developments are authorized if the structures and facilities will enhance wilderness values by promoting healthy, viable, and more naturally distributed wildlife populations and the visual impacts can reasonably be minimized. Proposals will be considered for construction of new developments, which may allow motorized and/or mechanized equipment if deemed necessary by the Minimum Requirements Decision Guide (MRDG) and site-specific NEPA analysis.

Site-specific Actions

Should removal, replacement, or modification be required for existing wildlife water developments, or if new water developments are proposed, the Ely District Manager will follow the requirements for processing, analyzing and evaluating such proposals in the MOU with NDOW. The Ely District Manager will issue a public notification, prepare a MRDG, NEPA analysis, and appropriate decision documents as prescribed by BLM policy and procedure.

Modifications to existing water developments may be made as long as the designed capacity and/or dimensions of the existing development are not exceeded.

Currently, there are no wildlife water developments in either of the two wilderness areas. However, should applications be submitted for development of new wildlife water developments the above process would be followed. Furthermore, should developments be install parameters for the inspection, maintenance, repair, removal or replacement are listed in Appendix B.

Wildlife Relocation

According to the BLM-NDOW MOU (2003), wildlife transplants (i.e. removal, augmentation, or reintroduction of wildlife species) may be permitted if judged necessary to perpetuate or recover a threatened or endangered species or to restore populations of indigenous (including sensitive) species eliminated or reduced by human disturbance. Locations outside of wilderness boundaries will be utilized first, and if not available, will be implemented in a manner compatible with wilderness characteristics. Transplant projects, including monitoring, require advance written approval from the BLM if the action involves ground-disturbing activities, motorized methods, and/or temporary holding and handling facilities. The BLM will provide review to NDOW on all releases near these wilderness areas. Release of wildlife on public lands will be in conformance with BLM Manual 1745 (Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife and Plants, 1992) and the BLM-NDOW MOU. A Minimum Requirements Decision Guide and site-specific NEPA analysis would occur for site-specific actions.

If motorized or mechanized means are authorized, staging would occur outside the wilderness boundary. When feasible, the specific project implementation will occur during periods when visitor use is low (for example, weekdays). In order to inform visitors of impending activity, relocation dates would be posted on the BLM website two weeks in advance.

Wildlife Damage Management

To maintain the areas' natural character, wildlife damage management may be necessary to protect federally listed, declining, and reintroduced indigenous wildlife species; to prevent transmission of diseases or parasites affecting other wildlife and humans; or to prevent considerable loss of livestock. Wildlife damage management is conducted at the request of federal, state, or local agencies, private organizations, and individuals.

Activities would use the minimum amount of control necessary to resolve wildlife damage problems. Acceptable control measures include lethal and non-lethal methods, however, toxicants and M-44 devices (sodium cyanide) are prohibited. Activities would be conducted on foot and may include the use of stock. Use of motorized vehicles, motorized equipment, and/or mechanical transport must be approved by the BLM on a case-by-case basis. Activities occurring in wilderness would be approved by the BLM and conducted in conformance with the BLM-APHIS MOU (1995) and BLM Manual 8560 (Management of Designated Wilderness).

Herd Areas

No herd areas exist for the Tunnel Spring Wilderness. As part of implementing the Ely District Approved Resource Management Plan (2008), the Clover Mountains HMA status has been dropped. This HMA had overlapped the Clover Mountain Wilderness and was not providing sufficient habitat resources to sustain healthy populations. All horses are targeted for removal. However, the Clover Mountains Wilderness now lies within the Clover Mountains Herd Areas. Hence, some horses may remain or immigrate from other areas leading to periodic gathers in order to achieve a zero level. If the minimum tool analysis in the MRDG results in motorized means for horse gathers, aircraft, including helicopters, may be used to survey, capture, and monitor wild horses or burros. However, aircraft may not land inside wilderness boundaries except in cases of emergency or by approval from the Ely District Manager. In cases where impacts to springs and riparian systems result from wild horses or burros, mitigation measures may be employed to prevent further degradation or to restore wilderness character.

Fire Management Objectives and Guidelines

Fire management objectives in the wilderness areas will be structured in accordance with the 2008 Ely Fire Management Plan (FMP) and the Ely District Approved Resource Management Plan (RMP) (2008). If the FMP is updated over the life of this Plan, the new policies would be followed. According to the RMP, the overall objectives for fire management are “To manage wildland and prescribed fires as one of the tools in the treatment of vegetation communities and watersheds to achieve the desired range of condition for vegetation, watersheds, and other resource programs (e.g., livestock, wild horses, soils, etc.)” For details regarding fire management units within wilderness, including maps, see Fire Management under Affected Environment and Environmental Consequences Page 71.

Appropriate Management Responses (AMRs) would be developed following the initial report for wildland fires in the planning area and would include a range of specific actions including monitoring, confinement, initial attack and suppression/extinguishment, or wildfire suppression with multiple strategies, and may include use of mechanized equipment and retardant. AMR would be determined for each wildland fire based on site factors, including fuel loading and fire behavior, protection of natural and cultural resources, and the circumstances under which a fire occurs, while ensuring the safety of firefighter, the public, and protection of private property. Wildfire management priorities include maintaining native vegetation diversity by managing fire size to minimize the spread and density of noxious or invasive weeds, such as red brome. Minimum Impact Suppression Tactics (MIST) guidelines would be followed in an effort to minimize impacts to wilderness character. Any actions deemed necessary by the Incident Commander for public and firefighter safety would be authorized.



Sawmill Fire, October 2009, Clover Mountains

Fire Suppression Guidelines

Minimum cost and consistency with resource objectives will be considered. The following points will guide suppression within wilderness:

- A Wilderness Specialist would be dispatched to all fires occurring in or threatening a wilderness area.
- Use of any motorized equipment, including heavy machinery such as bulldozers, would be considered for approval by the District Manager in cases where the fire is threatening human life, property, or wilderness characteristics.
- Helibases and helispots would be located outside of wilderness boundaries. When this is not feasible, the District Manager may approve sites within wilderness that require minimal clearing of natural vegetation.
- Staging areas and fire camps requiring motorized access would be located outside of wilderness unless authorized by the District Manager.
- Staging areas and fire camps that only require non-motorized access may be located in wilderness areas if authorized by the Wilderness Specialist.

- Sling loading materials into or out of wilderness using a helicopter must be approved by the District Manager.
- Helicopters or other aircraft may be used for aerial reconnaissance work.
- The Ely District Office Noxious Weed Prevention Schedule as updated, which identifies best management practices, would be utilized. Suppression equipment would be inspected and washed to prevent the spread of noxious weeds. Wash-down sites would be recorded using a Global Positioning System (GPS) unit, if possible, and reported to the Ely District Office Weeds Coordinator. Camps and other assembly points would not be located in noxious weed infestation areas.
- Use of retardant must be approved by the District Manager; if retardant is not approved, water may be dropped from aircraft or bucket as ordered by the Incident Commander without additional authorization.
- All fire suppression activities in wilderness would use MIST unless a higher degree or level of fire suppression is required.
- Leave No Trace principles would be used in wilderness areas. All evidence of human activity would be removed or rehabilitated to the maximum extent possible during demobilization.

Suppression Activity Damage

Repair of fire Suppression Activity Damage will generally be planned and implemented by the suppression incident organization, prior to demobilization. Repair may occur with the same type of equipment that was used for the suppression activity. If motorized earth-moving equipment was used to construct fire lines, then the same type of equipment may be needed for rehabilitation and recontouring.

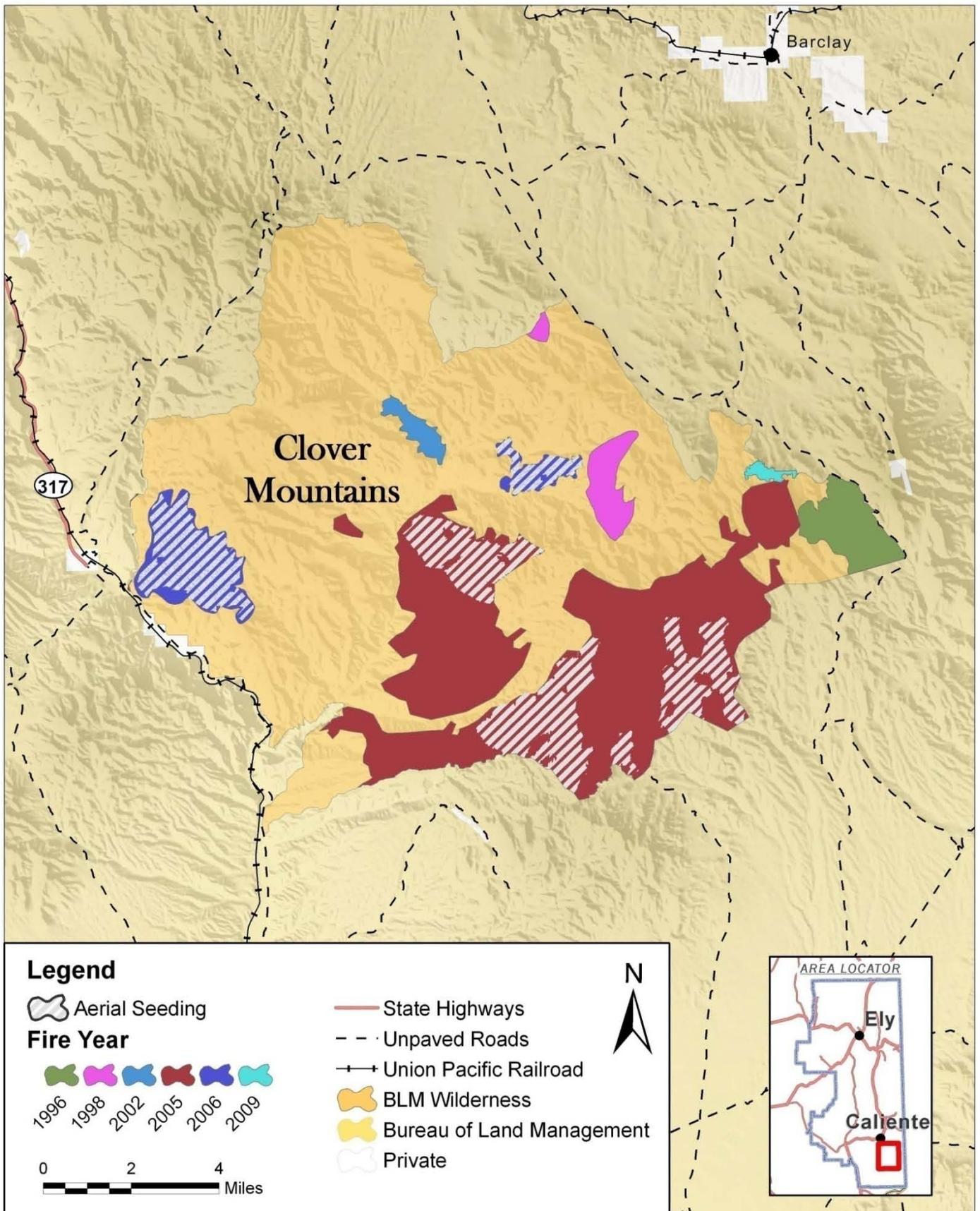
Emergency Stabilization and Rehabilitation Activities

Following site specific assessments and planning, Emergency Stabilization and Rehabilitation activities may be undertaken in accordance with current Department of Interior policy (620 DM 3 Wildland Fire Management Burned Area Emergency Stabilization and Rehabilitation) and Bureau of Land Management policy (H-1742-1 Burned Areas Emergency Stabilization and Rehabilitation Handbook). As of the end of 2008, ES & R actions have been taken to aerially seed 11,871 acres within the Clover Mountains Wilderness. No fires have been recently recorded in Tunnel Spring Wilderness, therefore no ES & R treatments have occurred (See Map 7 on the following page).

The following points will guide ES & R within wilderness:

1. Natural recovery by native plant species is preferable to planting or seeding. The potential for recovery of existing vegetation and the potential establishment of invasive species should be evaluated prior to recommending seeding or planting. Seeding or planting will only be used when objectives cannot be accomplished without seeding or planting and there is a threat to wilderness values if no action is taken. When seeding or

MAP 7: FIRE HISTORY AND EMERGENCY STABILIZATION & REHABILITATION TREATMENTS



planting is recommended, the use of native material, preferably of local genetic stock, will be first priority. When material of local genetic stock is not available timely or economically, or will not accomplish objectives, then other options may be evaluated.

2. The use of “assisted succession” or other similar techniques that employ the use of non-native species may be approved on a case-by-case basis with site-specific NEPA analysis. The use of non-native seed is appropriate only if 1) suitable native species are not available; 2) the natural biological diversity of the proposed management area will not be diminished; 3) exotic and naturalized species can be confined within the proposed management area; 4) analysis of ecological site inventory information, if available, indicates that a site will not support reestablishment of a species that historically was a part of the natural environment; 5) resource management objectives cannot be met with native species. (H-1745 Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants).
 - “Assisted succession” is a two-phase approach used to prevent an area from being dominated by invasive annual grasses or for manipulating an area that is already dominated by invasive annual grasses. In the first phase, a pattern of perennial plants is established. This pattern may be established using less desirable perennial species such as non-native species, or native species that are not locally adapted. In the second phase, the less desirable perennial plants are replaced or augmented with more desirable perennial plants. The second phase may or may not require active management to remove the less desirable perennials or to introduce more desirable natives. If the less desirable perennials are short lived, sterile, unable to reproduce successfully on the site, or will not compete well with more desirable natives when those plants become established, then management intervention may not be necessary to remove the less desirable perennials. If native recruitment of more desirable perennials occurs, then secondary seeding may not be necessary. In some cases, selective removal of less desirable species or secondary seeding may be necessary. Selective removal projects will follow guidelines presented in the Noxious and Non-Native Invasive Weeds section (Page 14).
3. The following activities could occur in Wilderness and may be approved on a case-by-case basis by the District Manager. These activities would follow guidelines presented in the Fire Suppression Guidelines section (Page 33) and must be necessary to meet minimum requirements for the administration of these two areas as wilderness.
 - The use of overland motorized equipment.
 - The location of helibases and helispots.
 - Sling loading materials into or out of wilderness using a helicopter.

- Helicopters or other aircraft for aerial seeding.
4. Temporary structures, such as hydrologic, meteorologic, or climatological collection devices, may be approved if deemed essential to flood warning, flood control, or water reservoir operation activities. Exclosure fences to protect seeding may also be approved.
 5. Erosion control techniques such as the installation of anchored logs, bales, or wattles; the application of mulch, or the use of other techniques to slow water flow may be approved when their presence would contribute to the long term enhancement of wilderness character, or are necessary to meet minimum requirements for the administration of these two areas as wilderness.
 6. Minor developments and facilities (e.g., kiosks, fences, exclosures, small water pipelines, interpretive or boundary signs, water control structures, corrals, wildlife water developments, trails, etc.) burned or damaged by wildfire could be repaired or replaced to pre-fire specifications when this repair or replacement would contribute to the long term enhancement of wilderness character, or is necessary



Sawmill Fire, October 2009, Clover Mountains Wilderness

to meet minimum requirements for the administration of these two areas as wilderness.

7. Non-motorized and non-mechanized visual inspections for hazardous conditions or materials may be conducted. This would not preclude aerial observations, though no landings would be permitted without District Manager approval.
8. Burned or seeded areas may be temporarily closed to the public if unacceptable resource damage would occur, or if danger to the public is present due to fire damage until safety assessments can be completed.
9. Efforts to stabilize and prevent post-fire related degradation to cultural resources including archeological sites, cultural landscapes, traditional cultural properties, and historic structures may be approved.
10. Techniques described in the “Management of Small-Scale Surface Disturbances” may be approved for use in ES & R (Page 21).

Site Specific Actions

The 2009 Sawmill Fire (306 acres) burned in the proposed ponderosa restoration project area (1,190 acres) described in the Vegetation Restoration section (Page 27). As a result of the severity of the fire, a ponderosa recovery plan was developed (Post-fire Recovery Plan Emergency Stabilization and Burned Area Rehabilitation Plan: Sawmill Fire). The ES & R plan describes, among other actions, the need for a ponderosa pine seedling planting (131 acres) on the burned area. Therefore, the action proposed here is to plant areas, which had a high mortality of ponderosa pine, with ponderosa seedlings in 2012 (See Map 6, page 30). Seed collection for seedling generation will occur outside wilderness in 2010. The proposed seeding will follow the same parameters described for the larger ponderosa restoration area detailed in the Vegetation Restoration section.

Protection of Archaeological Resources and Historic Properties

Protection of cultural resources is guided by federal laws, the Cultural Resource Inventory General Guidelines (1990) and the State Protocol Agreement between the BLM and the Nevada State Historic Preservation Office (as amended 2009). For protection from wildland fire and enhancement of cultural resources, vegetation may be cut back or removed up to several feet from a resource or property such as prehistoric rock art. This would be accomplished before fire season with the use of hand tools like pruning shears and pulaskis. Resource protection and enhancement work would be completed by trained cultural resource specialists or approved District archaeological technicians during routine monitoring visits.



Historic Carvings in Tunnel Spring Wilderness

Protection of archaeological resources from damage by wilderness visitors may be accomplished with the minimum necessary on-the-ground action. Resources would be monitored to determine conditions. If monitoring reveals that damage is occurring to cultural resources, the BLM Ely District wilderness planner and archaeologist would work together to develop a management strategy for preventing further damage, including, but not limited to, education, signage, and natural barriers.

Every attempt would be made for protection of artifacts and other archaeological remains in place. If these are discovered on designated trails, foot-worn hiking paths, or other areas of recreational use, the trail may be re-routed or alternate preservation or protection actions may be taken after consultation with the State Historic Preservation Office according to the standard process followed by the Ely District cultural representative.

Additionally, inventory for cultural resources will be completed at natural springs in proximity to, or within wilderness, and along access and cherry stem routes in an effort to inform management of decisions for the protection of these resources. No undertakings would occur prior to completion of cultural resource and consultation processes.

Within the Clover Mountains and Tunnel Spring Wilderness areas there have been nine Cultural Resource Inventories, during which two sites were documented. These

documented resources are prehistoric lithic scatters. These two sites have not had their National Register of Historic Places eligibility determined, thus they are unevaluated. Sites identified as unevaluated are treated as though they are eligible for listing until the site has been revisited and evaluated for eligibility. Isolated finds are categorically exempt from the National Register of Historic Places.

Site Specific Actions

No actions are proposed at this time. However, should activities regarding archeological Resources or Historic Properties be identified in the future, the above would be followed.

General Recreation Activity

A variety of primitive and unconfined types of recreational activities are likely to occur in all three wilderness areas. Management actions that may be initiated in response to recreational impacts include, but are not limited to:

- Public outreach and education in Leave No Trace principles to encourage minimum impact practices.
- Provide information to the public on non-wilderness recreational opportunities in the region.
- Establish protective areas around sensitive resources where recreation activities may be restricted.
- Closure of areas to recreation activities. Examples may include negative impacts to sensitive plant and animal species or water resources.
- Campsite management to maintain use at existing sites and prevent unmanaged site expansion or new site establishment.

Hunting and trapping are permitted in wilderness, subject to applicable State and Federal laws and regulations. Shed antler collection will be permitted for personal use only. These activities are and will likely continue to be popular.

The creation or construction of permanent blinds in wilderness areas and wilderness study areas is not allowed. However, portable or “pop-up” blinds may be temporarily allowed for hunting, photography, wildlife observation and similar purposes for a period of fourteen (14) days if they are packed or carried in and out and do not require the disturbance or destruction of native soil, rock, or vegetation.

Portable and “pop-up” blinds must be attended or occupied at least some portion of a ten day period within the 14 day period of use. If blinds are not attended or occupied for 10 days, they will be considered unattended property and/or permanent structures and will

be subject to removal by the BLM and subject to disposition under the Federal Property and Administrative Services Act of 1949, as amended.

It is suggested that anyone who packs or carries a portable or “pop-up” blind into a wilderness or wilderness study area affix to the blind his or her name, address, phone number, the date the blind was placed, and the dates the blind will be unattended or unoccupied.

Traditional geocaching and letterboxing will not be allowed, yet virtual geocaches would be an accepted activity within wilderness. Traditional geocaches and letterboxes will be removed when encountered, and visitors wishing to participate would be directed to locations outside wilderness.

Recreational horseback riding and use of pack stock animals will be permitted both on and off trail. Other than incidental browsing, riding and pack stock animals may only be fed with packed-in, certified weed-free feed.

According to BLM Wilderness policy, any fuelwood cutting in wilderness would be limited to dead and down material.

Petrified wood may be collected for non-commercial purposes on a limited basis. It must be removed in a manner that preserves the wilderness environment using no more than non-motorized hand tools and causing minimal surface disturbance. Collection of “common” invertebrate and plant fossils will be allowed for non-commercial purposes and must be removed in the same manner (Section 6301(1) Paleontological Resources Preservation Act of 2009). Seed collection, such as pine nuts, for personal use is allowed.

While there are no known caves in either of these wilderness areas, should any be located in the future the following regulations would apply. Cave resources are federally protected and some cave locations may be identified on maps or brochures. Both recreational caving and technical rock climbing will be allowed, however activities should not cause unacceptable impacts to wilderness. Damaging practices, including chiseling or chipping rock, forcibly prying off rock, gluing or otherwise affixing artificial holds on rock and destroying vegetation to enhance a route are prohibited. Disturbance to cultural resources, as a result of caving and climbing activities are prohibited in accordance with the Archaeological Resources Protection Act of 1979.

Camping

Backcountry camping will be allowed. Occupying a campsite will be allowed for up to 14 days. Should a visitor wish to camp longer than 14 days, their camp must be relocated a minimum of 25 miles from the previous site (Federal Register Notice, Vol. 58, No. 191, October 5, 1993). If monitoring shows that the 14-day stay limit is leading to unacceptable resource impacts, site stay limits of less than 14 days could be implemented. Campfires will be allowed except under fire hazard restrictions. Visitors will be allowed to collect dead and down fuelwood for personal campfires during their

trip. Leave No Trace camping techniques will be encouraged through literature and BLM-sponsored Leave No Trace public workshops. If more than two campsites (identified by the presence of a campfire rock ring) are identified within a quarter mile of each other, the least impacted site will be restored to a natural condition to minimize additional camping disturbance. Campsites closer than 300 feet to sole water sources will also be removed in compliance with state regulations.

Managing to Maintain Solitude

These wilderness areas currently exhibit outstanding opportunities for solitude and are infrequently visited, thus numeric standards for frequency of visitor encounters or group size limits would not initially be established. Large groups inquiring about recreational opportunities will first be directed to locations outside of wilderness, while small groups may be directed to locations within wilderness. If the wilderness character of solitude becomes degraded, the following management actions, in order of priority, may be initiated:

- Educate visitors concerning Leave No Trace recreation ethics to reduce conflict with other visitors.
- Provide information to the public on non-wilderness recreational opportunities in the region.
- Establish a group size.
- Reduce maintenance levels on access points and boundary roads and/or limit available public information.
- A combination of the above methods.
- Plan revision with additional public input to reassess these standards and/or implement more direct controls.

Environmental Education and Interpretation

General interpretive information regarding natural and cultural resources and recreation opportunities in wilderness will be located on kiosks outside of wilderness, in brochures, on BLM recreation maps, and at the BLM Ely District Office website. Wilderness-specific maps will include wilderness area descriptions, designated trails, interpretive information, as well as wilderness ethics and Leave No Trace principles. No interpretive trails will be designated.

When feasible, the BLM will collaborate with other agencies, non-government organizations, and individuals, including authors of media or guide books, in the presentation of basic information.

Public outreach for Leave No Trace recreation ethics will be emphasized using classes and workshops presented at local schools and in the field. A separate wilderness public education plan has been developed for programs related to designated wilderness.

Commercial Use Restrictions

Section 4(c) of the Wilderness Act (1964) prohibits commercial enterprises, such as mining or logging operations, to be located within wilderness. Commercial services, such as outfitters and guides or and pack stock rentals, may be performed within wilderness. Section 4(d) of the Wilderness Act states that commercial services are allowed, “. . . to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.” Therefore commercial services that are not wilderness-dependent or do not contribute to wilderness character or public education will be prohibited.

Commercial guiding will be permitted for:

- Hunting.
- Academically-oriented organizations whose primary purpose is wilderness or environmental education.
- Organizations whose service is primarily for the support of people with disabilities.
- Wilderness Therapy groups.

Outfitters and guides will be subject to statewide BLM special permit stipulations for commercial hunting/fishing guides as well as the same regulations as other visitors to these wilderness areas, unless otherwise stated in special recreation permits. Regulations for guides and outfitters will be in conformance with the BLM Ely District Resource Management Plan (2008), the Wilderness Act (1964), and LCCRDA (2004). Limits on the number of commercial guides may be implemented if monitoring identifies excessive impacts to wilderness character or resources.

Site Specific Actions

Second Nature Wilderness Program is a treatment program designed to help struggling teens by taking them on extended hiking/backpacking trips in the backcountry. The organization’s project area includes all of the Clover Mountains Wilderness area. A maximum of three groups (14 people maximum per group) would be allowed in the wilderness area at one time. The environmental assessment associated with Second Nature’s special recreation permit analyzes the impacts to wilderness (Second Nature Wilderness Program Operations EA NV-040-04-19). Stipulations for wilderness, including Leave No Trace practices, can be found in that plan, as well.

Law Enforcement

Enforcement of wilderness laws and federal regulations will be performed by uniformed BLM law enforcement rangers. BLM staff, contractors, and volunteers may indirectly assist law enforcement rangers by providing information regarding wilderness-related violations. Wilderness and law enforcement rangers will conduct patrols within

wilderness on foot or horseback and along the perimeter using motorized vehicles. Contingent upon District Manager approval, motorized equipment, including helicopters, may occasionally be allowed within wilderness when necessary to meet temporary emergencies involving violations of law, and/or the pursuit of fugitives, or operations involving search and rescue.

Research

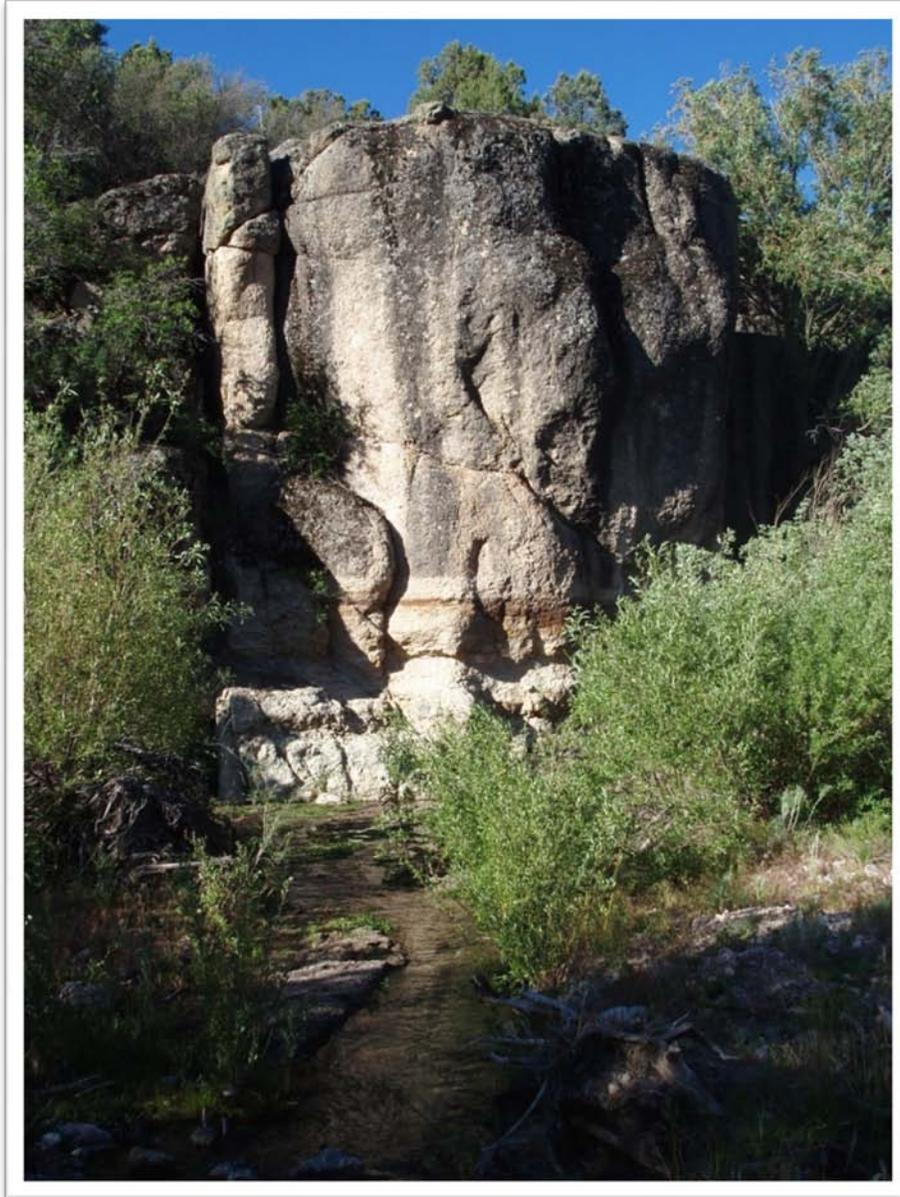
Research proposals investigating indigenous plant communities, wildlife, cultural resources, and the human dimensions of wilderness would be considered. Proposals must contribute to the enhancement of wilderness character or the improvement of wilderness management. All proposals will be subject to the restrictions and guidelines of BLM Manual 8560 (Management of Designated Wilderness Areas), the Wilderness Act (1964), LCCRDA (2004), the BLM-NDOW MOU (2003), as well as appropriate directions outlined in this wilderness management plan.

Research proposals that do not contribute to the improved management of the area as wilderness will not be permitted if they can be accomplished outside of wilderness and/or cannot be conducted in a manner compatible with the preservation of the wilderness environment.

Research and other studies must be conducted without use of motorized equipment or construction of temporary or permanent structures. Exceptions may be approved for projects that are essential to managing the specific wilderness areas when no other feasible alternatives exist. Such use must be necessary to meet the minimum requirements for administration of the area as wilderness and must not degrade wilderness character. A site-specific NEPA analysis would have to be prepared for the authorization of research proposals.

Water Rights

There are no Federal reserved rights as per the terms in the wilderness enabling legislation LCCRDA (2004). The BLM may acquire additional State appropriative water rights within these wilderness areas to sustain riparian habitat, provide water to wildlife, or support recreation. Existing water rights may be purchased from willing sellers or jointly managed with other agencies through cooperative agreements. All water rights actions will be in conformance with LCCRDA (2004). However, new water resource developments not related to wildlife are prohibited by LCCRDA (2004). In Appendix C, a table lists existing water rights within the boundaries of these two wilderness areas.



Tunnel Spring Wilderness

Structures, Installations and Other Human Effects or Disturbances

If summit registers are found to exist they will not be removed. Other structures and installations may be removed if they are not the minimum necessary for the administration of the area as wilderness, or if they are not associated with a prior use or valid existing right.

BLM staff and volunteers that monitor wilderness will be given instructions on the identification of human effects that would be considered unattended personal property or refuse. Unattended personal property not associated with an active camp, including

geocaches, will be removed by BLM personnel, and temporarily held at the appropriate BLM District or Field Office. If possible, the owner of the personal property will be contacted. In the case of a traditional geocache, the BLM would request that it be removed. In the instance that a virtual geocache identifies a sensitive site (such as cultural or biological) the sponsor will be asked to remove the cache from the internet. Human effects for which questions of age exist would be photographed for further consideration by an archaeologist.

Disturbance of cultural resources will be minimized. Cultural resources will be left in place unless protection measures described in the Protection of Archaeological Resources and Historic Properties section (Page 38) are insufficient and removal is deemed a last resort. Removal of cultural resources would not occur without full compliance with mitigation and protection requirements and processes.

Where mine adits or shafts are found in these wilderness areas, they may be filled in or closed in order to enhance wilderness character and public safety using wilderness compliant actions such as, but not limited to, hand tools, foam plug, and dynamite filling. NEPA and MRDG analyses would be required for all actions such as bulldozers and bat gates, and may be required for certain wilderness conforming actions. If mine adits or shafts are proposed for closure, bat and cultural surveys would be conducted.

Climate, Weather, and Water Monitoring Data Collection Devices

The installation of collection devices for climate, weather, or water monitoring may be considered in wilderness. Devices would have to conform to VRM (visual resource management) Class 1 goals and would be subject to NEPA and MRDG analyses. Section 121 in the Lincoln County Recreation and Development Act of 2004 states:

Subject to such terms and conditions as the Secretary may prescribe, nothing in this title precludes the installation and maintenance of hydrologic, meteorological, or climatological collection devices in the wilderness areas designated by this title if the facilities and access to the facilities are essential to flood warning, flood control, and water reservoir operation activities.

Military Operations

Military training exercises will not be located within the two wilderness areas. Directions for handling military operations would distinguish between non-emergency and emergency situations. Non-emergency incidents might include such activities as the release of flares, the recovery of aircraft parts, or the salvage of non-operational ordinance. Emergency situations may include, but are not limited to, the retrieval of downed aircraft, the rescue of pilots, or the recovery of live ordinance.

Non-emergency military actions may be approved on a case-by-case basis following MRDG analysis, environmental assessment, and authorization from the Ely BLM District Manger. The Ely District Office Noxious Weed Prevention Schedule (i.e., equipment inspection and washing, recording of wash-down sites, notification of the weeds coordinator, and avoidance of noxious weed infestation areas) will be utilized for non-emergency actions, as will Leave No Trace principles. All evidence of human activity would be removed to the maximum extent possible.

Emergency military actions involving prohibited uses identified in Section 4(c) of the Wilderness Act (1964) (e.g. motorized vehicles and mechanized equipment, mechanical transport, landing of aircraft etc.) will be permitted within wilderness without prior analysis, assessment, or authorization provided the 99CES/CC (Commander of the Civil Engineering Squadron of the 99th Airbase Wing at Nellis Air Force Base) notifies the Ely BLM District Manager at the onset of the emergency or immediately thereafter.

Monitoring Program

Monitoring tracks the outcome of proposed activities on the qualities of wilderness character previously defined (Page 7). A single activity is likely to affect several qualities of wilderness character. For example, an activity such as weed control is intended to restore natural conditions over the long-term but may diminish the untrammelled condition of the wilderness in the short- term. These two separate outcomes, the improvement of “naturalness” and decreased “untrammelled nature,” will be monitored separately.

On the other hand, separate activities undertaken for different purposes may cumulatively diminish the same qualities of wilderness character. For example, a trail might be designated to control visitor impacts on vegetation. In the same vicinity, a fence or barrier may be in place to protect sensitive resources from recreational impacts. Though the two activities are unrelated, both activities have an effect on the “undeveloped” quality of wilderness character. Monitoring the effects of single activities to multiple qualities of wilderness character will improve understanding of the effects upon wilderness character in combination and over time.

Effects of intentional, unintentional, and unauthorized activities will be captured under the monitoring system. The monitoring program will provide a greater understanding of the overall and specific condition of each wilderness area. Information generated in monitoring wilderness conditions will indicate 1) the current state of wilderness character; 2) how wilderness character is changing over time; 3) how stewardship actions are affecting wilderness character; and 4) what stewardship priorities and decisions would best preserve and sustain wilderness character. Monitoring will also provide wilderness managers with more complete information, which will improve the evaluation of future proposed activities. However, monitoring will not be used to compare conditions and changes within these wilderness areas with other wilderness areas in the

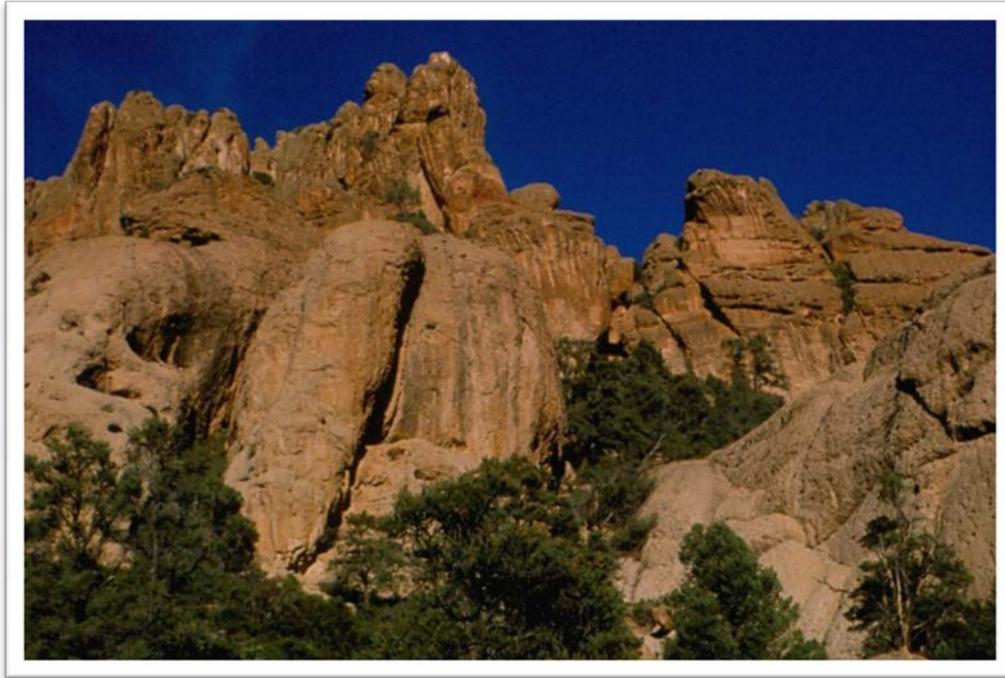
National Wilderness Preservation System. The following monitoring is associated with specific wilderness characteristics.

Untrammeled

- ❖ A log of all known human alterations to the ecosystem such as annual management and other activities that control or manipulate flora, fauna, soils, water, or natural disturbance factors present in the wilderness will be maintained in each area's permanent wilderness file. A description, location, purpose, and expected outcome of each activity would be documented. Activities that may be tracked include:
 - Campsite expansion and dispersion.
 - Rehabilitation projects.
 - Vegetation restoration and fuels treatment projects.
 - Fire suppression activities.
 - Emergency Stabilization and Rehabilitation activities.
 - Treatments of noxious or invasive vegetation.
 - Wildlife management activities.
 - Periods of livestock grazing.
 - Cultural and historic resource protection projects.

Solitude and Primitive, Unconfined Recreation

- ❖ A log of sights and sounds of civilization will be maintained in each area's permanent wilderness file. A description and location of the activity inside or outside wilderness will be documented.
- ❖ A log of all regulations or restrictions occurring in the wilderness areas will be maintained in each area's permanent wilderness file. A description of the regulation and its purpose will be documented.
- ❖ Visitor use encounters on designated trails (should designation occur in the future) will be monitored through one or more of the following methods:
 - Visitor sign-in and comment forms at trailheads and access points.
 - Public comment received by mail or by e-mail.
 - Automated visitor counters may be located at trailheads or access points.
 - Wilderness rangers or volunteer stewards will visit trailheads and access points at least once every two months to record the number of vehicles and collect written comments or other trail data.



Clover Mountains Wilderness

- ❖ Wilderness rangers or volunteer stewards will hike each trail (should any be designated or constructed in the future) at least twice a year to record the number of encounters and trail conditions. Trail conditions would be recorded using a GPS and photos would be taken as needed.
- ❖ The wilderness areas will be monitored at boundary roads and access points at least once every three months by wilderness staff and law enforcement rangers or volunteer stewards to detect any unauthorized uses. Additionally, over-flight and aerial surveillance monitoring will occur twice annually to assist in detecting unauthorized uses.
- ❖ Campsites will be recorded by the wilderness ranger to assure compliance with Plan standards. GPS coordinates and photos will be taken for campsites to track long-term trends.
- ❖ Popular hunting areas will be monitored regularly by wilderness rangers, law enforcement rangers, or volunteer stewards for motorized trespasses, foot-worn hiking paths, and proliferation of campsites during hunting season.

Undeveloped and Primeval Character

- ❖ A log of all the developments, structures, and facilities present in the wilderness areas, both permanent and temporary, will be maintained in each area's permanent wilderness file. A description, location, purpose, and expected utilization of the feature will be documented.

- ❖ All decommissioned routes and other rehabilitated disturbances will be assessed for motorized use at least twice a year. Photo points will be established at the time of reclamation, and photos will be taken as part of the semi-annual monitoring. If unauthorized vehicle use or other forms of disturbance continue, actions will be implemented to halt unauthorized vehicle use or other forms of disturbance.
- ❖ All designated administrative access routes will be checked at least twice a year to assess compliance with grazing permit terms and conditions.
- ❖ Popular hunting areas within these wilderness areas will be monitored during hunting season. Permanent blinds are not allowed and will be removed. Portable and “pop-up” blinds are allowed but must be attended or occupied at least some portion of a ten day period within the 14 day period of use. If blinds are not attended or occupied for 10 days, they will be considered unattended property and/or permanent structures and will be removed.

Naturalness

- ❖ A log of natural disturbances will be maintained in each area’s permanent wilderness file. A description and location will be documented or referenced. Activities that may be tracked include:
 - Fire.
 - Flood.
 - Insect or disease outbreaks.
 - Air quality using hand held devices.
 - Presence, abundance, and distribution of native species.
- ❖ Monitoring for noxious and invasive weeds will occur at least once a year, with an emphasis at springs, on trails, known weed infestations, or in washes receiving regular visitor use.
- ❖ Wildlife monitoring will be accomplished primarily by NDOW and the United States Fish and Wildlife Service, according to the agencies’ established protocol. The BLM wilderness rangers will also record wildlife sightings, in particular for nesting raptors and special status species. Monitoring or research by other entities may occur according to protocol described in this Plan.
- ❖ Findings, or a reference to the findings, from inventory, monitoring, and research projects will be included in each area’s wilderness file. Other documented research outside of wilderness but applicable to the understanding of wilderness ecosystems may be referenced.

- ❖ Monitoring to assess the effects of recreation on wildlife habitat use and behavior will occur if feasible monitoring methods are developed.
- ❖ Monitoring will be included to account for changes to the natural fire cycle occurring from introduced annual grasses. This additional monitoring will aid fire management in determining AMR on an annual basis. For fires having greater potential to convert native vegetation to unnatural annual grass-dominated vegetation, fire management will have better information to adjust response to the most active suppression response compatible with the fire management objectives and procedures for the area.
- ❖ Monitoring archaeological resources and historic properties regularly by BLM staff, volunteers, and through the cultural site steward program will be done frequently at known sites and for areas of high visitor use.

Monitoring of Site-Specific Actions

- ❖ Additional monitoring will occur for the following site-specific actions associated with the attached environmental assessment in order to ensure that wilderness character is protected and that undue impacts to other resources are not occurring as a result of the proposed actions:
 - Tamarisk and Russian olive treatments.
 - Ponderosa pine restoration project.
 - Rehabilitation of linear disturbances.
 - Effectiveness of sign plan.
 - Success of small-scale surface disturbance reclamation.

All field reports, photographs, and monitoring data will be maintained in the official wilderness files at the BLM Ely District Office.

Plan Evaluation

The Plan will be revised when the management actions prescribed no longer meet the wilderness management objectives, or when a change in the existing situation warrants revised management. The need for revision will be reviewed every five years. If the decision is made to revise this Plan, it will be accomplished with public participation. Minor revisions such as typographical or cartographical errors may be made by inserting an errata sheet.

Plan Implementation Sequence

The following list shows the priority sequence for accomplishing management activities of this Plan. The actual implementation could be altered based on funding and staff availability outside the control of this Plan.

Ongoing Activities

- ❖ Maintenance of boundary signs.
- ❖ Vegetation clearing around archaeological resources.
- ❖ Visitor information dissemination.
- ❖ Wilderness monitoring:
 - Visitor use monitoring.
 - Natural resource monitoring.
 - Trail condition monitoring.
 - All other wilderness character monitoring.

Site-Specific Projects

Implementation will not require additional NEPA analysis for the following projects because they are analyzed in the EA associated with this Plan:

- ❖ Archaeological and botanical clearances to support Plan implementation.
- ❖ Reclamation:
 - Former vehicle routes.
 - Campsites.
 - Prospecting disturbance.
- ❖ Removal of unnecessary structures and installations.
- ❖ Maintenance, modification, or removal of livestock developments as appropriate.
- ❖ Herbicide treatments for Tamarisk and Russian olive.
- ❖ Conduct Ponderosa pine planting in 2012 on 131 acres and the remaining portion of the 1,190 acres as funding becomes available.

Changing Conditions Requiring Subsequent NEPA Analysis

- ❖ New visitor impacts.
- ❖ New vehicle access point or staging area construction.
- ❖ Write and publish supplemental rules for all visitor use standards established in the Plan as specified within 43 CFR 8365.1-6.
- ❖ Management of social conditions:
 - Group size limits.
 - New sign or kiosk installation.
- ❖ NEPA following non-conforming fire management and suppression actions (such as the use of a bulldozer).
- ❖ Large weed control projects.

Potential Future Proposals Requiring Subsequent NEPA Analysis

- ❖ Riparian area restoration to mitigate wild horse and livestock grazing impacts.
- ❖ Vegetation restoration projects.
- ❖ Fire rehabilitation/Emergency Stabilization and Rehabilitation projects.
- ❖ Guiding permits.
- ❖ Wildlife projects (such as construction of wildlife water developments)
- ❖ Research on natural or cultural resources.
- ❖ Future trail designation or new trail construction:
 - Trailhead development.

**U.S. Department of the Interior
Bureau of Land Management
Nevada State Office
Ely District Office**

**Clover Mountains Wilderness
Tunnel Spring Wilderness**



Tunnel Spring Wilderness

Preliminary Environmental Assessment

DOI-BLM-NV-L000-2009-007-EA

Month, Date, Year

Background Information

Introduction

The BLM Ely District Office proposes to adopt and implement a Wilderness Management Plan (WMP) for the Clover Mountains and Tunnel Spring Wilderness areas during fiscal year 2009. The Clover Mountains Wilderness is located in southern Lincoln County approximately 12 miles south of Caliente, Nevada in the western Clover Mountains. The Tunnel Spring Wilderness is located in northeastern Lincoln County, Nevada. These former wilderness study areas were designated as wilderness by the Lincoln County Conservation, Recreation and Development Act of 2004 (LCCRDA; Public Law 108-424 November 30, 2004).



The United States Congress established the National Wilderness Preservation System to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States. Wilderness designation is intended to preserve and protect certain lands in their natural state. Only Congress, with Presidential approval, may designate public lands as Wilderness. The Wilderness Act of 1964 identifies wilderness uses and prohibited activities. Although wilderness character is a complex idea and is not explicitly defined in the Wilderness Act, wilderness characteristics are commonly described as:

- **Untrammeled** — area is unhindered and free from modern human control or manipulation.
- **Natural** — area appears to have been primarily affected by the forces of nature.
- **Undeveloped** — area is essentially without permanent improvements or human occupation and retains its primeval character.
- **Outstanding opportunities for solitude or a primitive and unconfined type of recreation** — area provides outstanding opportunities for people to experience solitude or primeval and unrestricted recreation, including the values associated with physical and mental inspiration and challenge.

Additionally, the wilderness areas may contain ecological, geological, or other features of scientific, educational, scenic, or historical value. These supplemental values are optional wilderness characteristics which need not be present for an area to meet the definition of wilderness.

This EA is tiered to the following Environmental Assessment:

- Wilderness Disturbance Reclamation Environmental Assessment (NV-040-05-010).

Purpose and Need

The purpose of a wilderness management plan is to preserve the areas' wilderness characteristics by identifying the conditions and opportunities that will be managed for within wilderness, creating specific guidelines for managing wilderness resources and activities, and identifying management needs outside of, and immediately adjacent to these areas over an approximately ten-year span.

The need for the Proposed Action stems from the Wilderness Act of 1964, which mandates that the primary management direction is to preserve wilderness character, and BLM Manual 8560, Management of Designated Wilderness Areas, which states in Section .2.21, "A wilderness management plan must be developed for each BLM-administered wilderness area." The proposed action would create specific guidance to achieve this mandate.

Relationship to Planning

This Plan has been analyzed within the scope of the Ely Resource Management Plan (2008) and has been found to be in conformance with the goals, objectives, and decisions of the Decision Summary and Record of Decision.

BLM planning regulations (43 Code of Federal Regulations 1610.3.2[a]) require that BLM resource management plans be consistent with officially approved plans of other federal, state, local, and tribal governments to the extent those plans are consistent with federal laws and regulations applicable to public lands. Although this regulation does not apply to other official plans created after the land use plan is implemented, the BLM strives for management decisions to be consistent with other official plans.

Compliance with Executive Orders, Laws, Regulations, and State Statutes

The Proposed Action and alternative action are in compliance with the following:

- The Wilderness Act of 1964 (16 U.S.C. §§ 1131-1136, September 3, 1964, as amended 1978).
- The Federal Land Policy and Management Act of 1976 (43 U.S.C. §§ 1701-1782, October 21, 1976, as amended 1978, 1984, 1986, 1988, 1990-1992, 1994 and 1996).
- The Lincoln County Conservation, Recreation and Development Act of 2004 (Public Law 108-424).
- The National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321-4347, January 1, 1970, as amended 1975 and 1994).
- The Endangered Species Act of 1973 (16 U.S.C. §§ 1531-1544, December 28, 1973, as amended 1976-1982, 1984, and 1988).
- Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668d, June 8, 1940, as amended 1959, 1962, 1972, and 1978).
- Migratory Bird Treaty Act (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989).
- Executive Order 13186 Responsibilities of Federal Agencies to Protect Migratory Birds (2001).
- Management of Designated Wilderness Areas (43 CFR Part 6300).
- Recreation Management Restrictions: Occupancy Stay Limitation (43 CFR 8365.1-2(a) and Federal Register Notice NV-930-4333-02).
- Unlawful Manner of Camping Near Water Hole (Nevada Revised Statute 503.660).
- Executive Order 13112: Invasive Species (1999)
- Executive Order 13443: Facilitation of Hunting Heritage and Wildlife Conservation (2007).
- National Historic Preservation Act (Public Law 89-665; 16 U.S.C. 470 as amended through 2000).
- Federal Property and Administrative Services Act of 1949 (40 U.S.C. as amended through P.L. 106-580, Dec. 29, 2000).

- Archaeological Resources Protection Act of 1979, As Amended (Public Law 96-95; 16 U.S.C. 470aa-mm)
- Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195).

Relationship to Policies and Guidelines

The Proposed Action and alternative action are in conformance with the following guidelines, manuals, and handbooks:

- Grazing Guidelines (House Report No. 101-405, Appendix A).
- Wildlife Management Guidelines (House Report No. 101-405, Appendix B).
- Management of Designated Wilderness Areas (BLM Manual 8560).
- Wilderness Management Plans (BLM Manual 8561).
- BLM Emergency Stabilization and Rehabilitation Handbook (1742-1).

Issues

Issues addressed in this EA were identified through internal and public scoping during the development of the wilderness management plan, which is the proposed action. Internal scoping was done via meetings and written communications with BLM resource specialists. Public scoping was conducted in the form of public workshops, meetings, written letters, email, and by BLM staff. For details, see the Wilderness-Specific Issues section on Page 7 of the WMP.



Western fence lizard (Sceloporus occidentalis) in Clover Mountains Wilderness

All resources considered or analyzed in this Environmental Assessment are displayed in Table 1 (See Page 69). All issues and concerns received through internal and external scoping that relate to wilderness resource conditions were considered during the development of the range of alternatives. Certain issues and concerns were judged to be out of the scope of this analysis and were not further considered. For further detail also see Table 1.

Description of the Proposed Action and the No Action

Proposed Action

The WMP, the first half of this document, is proposed for implementation and is the Proposed Action. It consists of the following Wilderness Management Categories, fully described in the WMP, that relate to either specific resources or resource programs administered by the Ely BLM District Office. These categories are briefly described in the Environmental Assessment with a reference to the detailed description contained within the WMP. Certain Wilderness Management Categories contain site-specific proposed actions. The remainder outline general guidelines for each non-wilderness resource program operating within wilderness. Although the Plan would not administer these resource programs, resource activity plans have been evaluated to ensure conformity with laws, management goals, and objectives for these wilderness areas.

No Action

The No Action alternative briefly describes differences within each category if a wilderness management plan was not adopted. This alternative provides a baseline for comparison. In general however, the management plan identifies wilderness related constraints for non-wilderness resource programs that may operate within wilderness. Most of these constraints would still occur without adopting the Plan.

Wilderness Management Plan Actions

Noxious and Non-Native Invasive Weeds

Proposed Action

Current noxious and invasive weed infestations include, but may not be limited to Tamarisk (*Tamarix spp.*, noxious, category C), Russian olive (*Elaeagnus angustifolia*, not currently listed as noxious in Nevada) and small areas of cheatgrass (*Bromus tectorum* or *Bromus rubens*). Management emphasis in wilderness would be placed on

controlling small infestations with the potential to spread and displace native plants. Treatments for large infestations (defined by the BLM Ely District Weeds Coordinator) would be considered separately. Site-specific actions would treat known infestations of Tamarisk and Russian olive. Treatment methods include hand pulling, herbicides, reseeding, and alternatives such as targeted grazing. The detailed description, including treatment methods, is found in the WMP starting on Page 14 (See Map 2, Page 17).

No Action

There is currently no existing management plan with which to treat large infestations of invasive grasses such as red brome in wilderness. Noxious weeds would be treated on a case-by-case basis as per the District Noxious Weed Plan. The BLM's noxious weed classification system (which is described in the BLM Manual 9015 Integrated Pest Management) would be consulted in setting priorities for weed control.

Range

Proposed Action

Grazing would continue under federal regulations to meet the Mojave – Southern Great Basin Resource Advisory Council Standards. Activities and the necessary facilities used to support livestock grazing would be permitted to continue in wilderness. Planning related to grazing operations would be guided by the Congressional Grazing Guidelines (House Report 105-405 Appendix A, 1990) and the BLM Manual 8560 (Management of Designated Wilderness Areas). Site-specific actions relate to administrative access needs of specific grazing allotments. Detailed description, including maps, are found in the WMP starting on Page 16 (See Maps 3 - 4, Pages 19 - 20).

No Action

No difference from the proposed action except all requests may be approved on a case-by-case basis.

Management of Small-Scale Surface Disturbances

Proposed Action

Disturbances fall into two categories with common characteristics: small-site disturbances including abandoned developments, mining claims, and dispersed campsites; and linear disturbances created by motorized vehicle traffic that are largely denuded of vegetation. Environmental Assessment NV-040-05-010 (Wilderness Disturbance Reclamation), as well as the EA associated with the WMP, may be referenced for approved methods for decommissioning former vehicle routes and rehabilitating small-site disturbances. Methods include decompaction, scarifying/pitting,

recontouring, vertical mulching, erosion control, desert varnish colorant, and vegetative restoration. The WMP provides a detailed description starting on Page 21 (See Maps 2 - 3, Pages 19 - 20).

No Action

Based on routine monitoring, reclamation activities would occur as necessary on a case-by-case basis according to methods and standard operating procedures as outlined in the Wilderness Disturbance Reclamation Environmental Assessment NV-040-05-010.

Management and Designation of Trails

Proposed Action

The proposed action identifies guidelines for designated trails that may occur in the future and how designated and foot-worn hiking paths would be managed. The WMP provides a detailed description, including trail guidelines, starting on Page 24.

No Action

Four miles of existing former vehicle routes – 3.75 miles in the Clover Mountains and 0.25 miles in Tunnel Spring Wildernesses – would be treated as foot-worn hiking paths and be reclaimed according to existing BLM policy. These paths would not be displayed or described on BLM maps or brochures and would be monitored according to existing BLM policy.

Management of Vehicle Access Points and Designation of Staging Areas

Proposed Action

The proposed action outlines management actions designed to protect wilderness character near heavily used access points into wilderness now and in the future. Detailed description, including maps, is found in the WMP starting on Page 25.

No Action

Visitors would be able to park their vehicles and access wilderness from any public point outside of the wilderness boundary. No vehicle staging areas would ever be designated or defined to direct recreational use to the most desired and suitable access points.

Sign Plan

Proposed Action

The proposed action outlines general guidelines for future sign placement. Current kiosk and informational sign placement will be based on details from the document DOI-BLM-NV-L000-2009-003-CX. Detailed description, including maps, is found in the WMP starting on Page 26 (See Map 5, Page 28).

No Action

No difference from the proposed action.

Vegetation Restoration

Proposed Action

A ponderosa pine (*Pinus ponderosa*) restoration project is proposed for the Clover Mountains Wilderness (Page 27), a component of which is a smaller ponderosa planting project related to, and described in the ES & R section (Page 34). Other vegetation restoration project proposals would be considered based on the guidelines outlined in the WMP starting on Page 29 (See Map 6, Page 29).

No Action

The large scale ponderosa pine restoration project may not occur due to funding.

Wildlife Management

Proposed Action

Management of wildlife is the responsibility of the Nevada Department of Wildlife. Management of wildlife habitat is the responsibility of the BLM. Over the life of this plan it may be necessary to implement wildlife management activities to prevent degradation or enhance wilderness characteristics by promoting healthy, viable, and more naturally distributed wildlife populations and/or their habitats. Detailed guidelines are found in the WMP starting on Page 30. Categories related to wildlife management are as follows:

- ***Wildlife Water Developments***
- ***Wildlife Relocation Activities***
- ***Wildlife Damage Management***

No Action

A comprehensive WMP would not guide wildlife related management categories. Activities within these wilderness areas would be conducted in conformance with the current (2003) and subsequent BLM-NDOW Memorandum of Understanding (MOU) and guided by Lincoln County Conservation, Recreation and Development Act (LCCRDA) (2004), as well as BLM-APHIS MOU (1995) and BLM Manual 8560 (Management of Designated Wilderness).

Herd Areas

Proposed Action

The BLM Ely District Office Wild Horse Program's activity plans guide the management of wild horses and burros. No formal herd management areas exist in these two wilderness areas and all horses are to be removed. However, the Clover Mountains is within a herd area, and periodic gathers may still need to occur. On-the-ground management activities would be accomplished on foot or by the use of pack stock. Detailed guidelines are found in the WMP starting on Page 32.

No Action

No difference from the proposed action.

Fire Management Objectives and Guidelines

Proposed Action

Fire management objectives in these wilderness areas would be structured in accordance with the 2008 Ely District Fire Management Plan. If it is updated over the life of this Plan, the new policies would be followed. Following fire, Emergency Stabilization and Rehabilitation activities may be undertaken in accordance with current Department of Interior policy (620 DM 3 Wildland Fire Management Burned Area Emergency Stabilization and Rehabilitation) and Bureau of Land Management policy (H-1742-1 Burned Areas Emergency Stabilization and Rehabilitation Handbook). Detailed guidelines are found in the WMP starting on Page 32. Categories related to fire management are as follows:

- ***Fire Suppression Guidelines***
- ***Suppression Activity Damage***
- ***Emergency Stabilization and Rehabilitation Activities***

No Action

The ES & R ponderosa pine planting project would not occur. However, fire management activities would occur without the guidance of a comprehensive WMP.

Protection of Archeological Resources and Historic Properties

Proposed Action

In addition to federal laws, protection of cultural resources for all BLM Ely District Office resource programs is further guided by the Cultural Resource Inventory General Guidelines (1990) and the State Protocol Agreement between the BLM and the Nevada State Historic Preservation Office. Protection involves both monitoring and inventory. The proposed management plan will not alter the management of archeological resources and historic properties. Therefore, there will be no adverse effect on archeological resources and historic properties which will remain protected under federal laws. Specific guidelines for the protection of cultural resources are found in the WMP starting on Page 38.



Remnants of historic settlement in Cottonwood Canyon, Clover Mountains Wilderness

No Action

With or without adoption of this plan, management of archeological resources and historic properties would not change. Therefore, the No Action is the same as the Proposed Action. All laws regarding the protection of these resources, such as the Archaeological Resources Protection Act of 1979 and the National Historic Preservation Act of 1966, would apply.

General Recreation Activity

Proposed Action

General recreation activities include hunting, trapping, shed antler and petrified wood collection, horseback riding, caving, climbing, hiking, and backpacking. Detailed guidelines for current and potential future management related to these activities are found in the WMP starting on Page 40. Categories related to general recreation management are as follows:

- *Camping*
- *Managing for Solitude*

No Action

No specific management actions would be taken regarding general recreational activities allowed in wilderness. Campsites would not be moved or rehabilitated.

Environmental Education and Interpretation

Proposed Action

On and off site general interpretive information regarding natural and cultural resources and recreation opportunities in wilderness would be located on informational signs outside of wilderness, in brochures, on BLM recreation maps, and at the BLM Ely District Office website. Detailed guidelines for general interpretive information regarding natural and cultural resources and recreation opportunities in wilderness are found in the WMP starting on Page 42.

No Action

The BLM developed a wilderness public education plan for programs related to wilderness. This plan would be implemented without the guidance of a comprehensive WMP.

Commercial Use Restrictions

Proposed Action

Section 4(c) of the Wilderness Act (1964) prohibits commercial enterprises within wilderness, with the exception of those commercial services listed in Section 4(d) of the Wilderness Act. Details on commercial uses allowed in wilderness, including guide services, are found in the WMP starting on Page 43.

No Action

There would be no difference from the proposed action.

Law Enforcement

Proposed Action

Enforcement of wilderness laws, federal regulations, and resource protection services would be performed by uniformed BLM Law Enforcement Rangers on foot or horseback and along the perimeter using motorized vehicles. Detailed guidelines regarding law enforcement in wilderness are found in the WMP starting on Page 43.

No Action

Current laws, policies, and guidelines would be followed without the guidance of a comprehensive WMP.

Research

Proposed Action

Research proposals investigating indigenous plant communities, wildlife, cultural resources, and the human dimensions of wilderness would be considered. Detailed guidelines regarding appropriated research proposals and subsequent approval within wilderness are found in the WMP starting on Page 44.

No Action

Scientific research proposals would be considered that adhere to current laws, policies, and guidelines, but would be implemented without the guidance of a comprehensive WMP.

Water Rights

Proposed Action

The BLM would adhere to Nevada state water law and could seek to acquire water rights to sustain riparian habitat, provide water to wildlife, or support recreation. For details see the WMP starting on Page 44.

No Action

No difference from the proposed action.

Structures, Installations and Other Human Effects or Disturbances

Proposed Action

BLM staff and volunteers monitoring wilderness would be given instructions on the identification of human effects that would be considered unattended personal property or refuse. Unattended personal property not associated with an active camp, including traditional geocaches, would be removed by BLM personnel, and temporarily held at the appropriate BLM District or Field Office. Detailed guidelines regarding this category are found in the WMP starting on Page 45. Categories related to Structures, Installations, and Other Human Effects are as follows:

- *Climate, Weather, and Water Monitoring Data Collection Devices*



Butterfly in Clover Mountains Wilderness

No Action

Current laws, policies, and guidelines would be followed without the guidance of a comprehensive WMP.

Military Operations

Proposed Action

Military training exercises would not be located within wilderness. Guidelines for handling military operations would distinguish between emergency and non-emergency situations. Non-emergency incidents include release of flares, recovery of aircraft parts or retrieval of non-operational ordinances. Emergency situations include downed aircraft or pilot and some classes of live ordinance. Detailed guidelines for potential military operations are found in the WMP starting on Page 46.

No Action

Current laws, policies, and guidelines would be followed without the guidance of a comprehensive WMP.

Additional Action Alternatives

Other Action Alternatives

No other action alternatives were needed to address unresolved conflicts concerning uses of available resources.

Alternatives Considered but Eliminated from Analysis

No other alternatives were considered for the Plan.

Affected Environment and Environmental Consequences

Introduction

The scope of this Environmental Assessment (EA) analysis comprises the Clover Mountains and Tunnel Spring Wilderness areas located in Lincoln County within the Central Basin and Range and Mojave Basin and Range Ecoregions. The BLM's NEPA Handbook (H-1790-1) requires that all EAs address specific resources or concerns of the human environment. The list of elements contained in the handbook has been expanded

by BLM Instruction Memoranda and Executive Orders. These items, along with the rationale for including or not including them in this analysis, are listed in Table 1. Resources not adversely affected will not be considered further in this document.

Resources/Concerns Considered for Analysis

The following items have been evaluated for the potential for impacts to occur, either directly, indirectly, or cumulatively, due to implementation of the Proposed Action. Consideration of some of these items is to ensure compliance with laws, statutes, or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, and to the BLM Ely District in particular. Following the table, each **analyzed** item is organized into two parts; Affected Environment and Environmental Consequences.

Table 1. Resources/concerns considered for analysis.

<i>Resource/Concern</i>	<i>Issue(s) Analyzed? (Y/N)</i>	<i>Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis</i>
Air Quality	N	Proposed Action would not increase air pollutant concentrations.
Cultural Resources	N	All ground disturbing activities will be subject to National Historic Preservation Act (1966), Section 106 review, and SHPO consultation as per BLM Nevada's implementation of the protocol for cultural resources. All proposed activities and disturbances must avoid cultural resources. Prior to proposed ground disturbing activities, all project areas will be inventoried to identify possible cultural resources. A cultural resources inventory needs assessment would be completed and recommendations would be followed.
Environmental Justice	N	No minority or low-income groups would be affected by disproportionately high and adverse health or environmental effects.
Fire Management	Y	Fire management actions may affect wilderness character.
Fish and Wildlife	Y	Proposed action may impact individual animals or fish.
Floodplains	N	Resource not present.
Forest and Rangeland Health	N	The Mojave/Southern Great Basin Resource Advisory Council sets the standards and guidelines for this resource. The proposed action does not impact this guidance. The range and wild horse programs are responsible for adhering to the Council's standards and guidelines for rangeland health. The large scale ponderosa pine project for the Clover Mountains Wilderness would benefit forest health.
Grazing Uses	Y	The Wilderness Act 1964 allows grazing within wilderness. Congressional Grazing Guidelines (excerpt from House Report 101-405 Appendix A, 1990) dictate allowable uses and maintenance of range developments in wilderness. The BLM's Range Management Program guides AUMs and season of use for allotments.

<i>Resource/Concern</i>	<i>Issue(s) Analyzed? (Y/N)</i>	<i>Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis</i>
Invasive Non-native Plant Species (includes noxious weeds)	Y	Proposed action may increase the potential to spread noxious and invasive weeds. Mitigation measures may reduce the potential to spread weeds.
Land Uses	N	Designation of wilderness, not this WMP, affects land uses.
Migratory Birds	N	Following the BLM interim management guidance for the Migratory Bird Treaty Act would prevent or diminish impacts.
Mineral Resources	N	No mine claims existed previous to wilderness designation.
Native American Religious Concerns	N	No concerns raised at this time.
Paleontological Resources	N	No known sites of high scientific value are known. The proposed action does not conflict with the BLM's Ely District Resource Management Plan (2008).
Recreation Uses	Y	Potential to designate trails and staging areas, placement of signs/kiosks, and potential for additional regulations may affect recreational use of these areas.
Special Designations other than Designated Wilderness	N	None present.
Special Status Animal Species (Federally protected, Nevada State protected, BLM Sensitive rated)	Y	Individual State protected or Nevada BLM listed sensitive species may be impacted by the proposed action.
Special Status Plant Species (Federally protected, Nevada State protected, BLM sensitive rated)	Y	Proposed action may impact undiscovered individual plants.
Vegetation/Soils/Watershed	Y	Weed management and route decommissioning may affect small areas of vegetation. Soils would not be destroyed or removed and watershed function would not be adversely affected. Vegetation communities would be improved with the implementation of the WMP.
Vegetative Resources (Forest or Seed Products)	N	The Wilderness Act does not allow forest or seed products to be sold from within the wilderness resource. It is not feasible to track and determine individual gathering impacts.
VRM	N	The proposed action is consistent with Visual Resource Management (VRM) Class I objectives for wilderness. The proposed action (except route decommissioning) would not be visible from any road and the level of change to the landscape is low.
Wastes, Hazardous or Solid	N	No wastes are anticipated.
Water Quality, Drinking/Ground	N	Does not affect, herbicides used for Tamarisk eradication are approved for use in aquatic areas.
Water Resources (Water Rights)	N	BLM is subject to State of Nevada water rights laws.

<i>Resource/Concern</i>	<i>Issue(s) Analyzed? (Y/N)</i>	<i>Rationale for Dismissal from Analysis or Issue(s) Requiring Detailed Analysis</i>
Wetlands/Riparian Zones	N	Springs have been modified for livestock use and this Plan does not have the authority to change that. Herbicides proposed to eradicate Tamarisk that exists at several springs and along streams are approved for aquatic use. Implementing the standard operating procedures stated in the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic EIS (2007) will prevent impacts.
Wild Horses	N	Herd Areas seek an Appropriate Management Level of zero.
Wilderness	Y	Proposed actions seek to maintain, restore, or enhance wilderness character.

Mandatory Items Analyzed

Fire Management

Affected Environment

The BLM’s objective regarding fire management is to manage wildland and prescribed fires as one of the tools in the treatment of vegetation communities and watersheds to achieve the desired range of condition for vegetation, watersheds, and other resource programs (BLM 2008).

The fire management units (FMUs) that overlap these wilderness areas are displayed in Map 9 (Page 74) and described in Table 2 (Page 72). The primary goals of these FMUs are to employ wildland and prescribed fire, as well as non-fire treatments, in an effort to improve watershed cover conditions and to hinder the spread of non-native invasive annual grasses. The fire management type displayed in Table 2 is a designation that defines an FMU’s primary resource management objective and fire protection values. The majority of each wilderness area is characterized by Fire Regime Condition Class (FRCC) 2 with significant portions rated as FRCC 1 (See Map 10, Page 75). An FRCC rating is the degree of departure from the historical fire regime, or in other words, fire frequency and severity. The following are the relevant FRCC definitions:

- *Fire Regime Condition Class 1 (CC1):* “...fire regimes in this condition class are within historical ranges. Thus, the risk of losing key ecosystem components from the occurrence of fire remains relatively low. Maintenance management such as prescribed fire, mechanical treatments, or preventing the invasion of non-native weeds, is required to prevent these lands from becoming degraded.”

- *Fire Regime Condition Class 2 (CC2):* “Fire regimes on these lands have been moderately altered from their historical range by either increased or decreased fire frequency. A moderate risk of losing key ecosystem components has been identified in these lands. To restore their historical fire regimes, these lands may require some level of restoration as through prescribed fire, mechanical or chemical treatments, and the subsequent reintroduction of native plants.”

Some of the vegetation communities in these areas are not fire adapted; however, fires are now fueled by the presence of non-native annual grasses (cheatgrass), which increases fire intensity, rate of spread, and fire frequency. Non-native invasive annual grasses tend to return in higher densities after fire leading to an unnatural fire regime and less diverse vegetation community. Non-native annual grasses burn more frequently and at larger scale than the native vegetation.

Major fires have been documented in Clover Mountains Wilderness area since 1996. The most significant year on record was 2005 where 26% (23,005 acres) of the wilderness area was burned. A wet winter and spring led to a high fuel load of primarily red brome. Fire management will continue to be an important challenge unless native vegetation communities can be restored to these areas.

Most recently, the Sawmill Fire (September – October 2009) burned a total of 307 acres, 174 of which were in the Clover Mountains Wilderness. This moderate to high severity fire burned through a ponderosa stand resulting in 100% mortality of trees and destroyed the seed bank and cones on 130 acres within wilderness. Natural regeneration without treatment would be a slow process and would open up the area to the spread of significant nearby invasive weed populations and increase the rate of habitat type conversion in this area.

Table 2. Fire Management Units (FMUs) within the Clover Mountains and Tunnel Spring Wilderness Areas.

<i>Wilderness Area</i>	<i>FMU Name</i>	<i>FMU Type</i>	<i>FMU Acres Within Wilderness by Percent</i>
Clover Mountains	Caliente Watershed WUI	Wildland Urban Interface (Clover)	6.9%
	Clover/Delamar/S. Pahroc/Irish	High Value Habitat	64.2%
	Elgin/Blue Nose/Kane Spring PJ	Vegetation (Mountain Shrub)	24.7%
	Mojave	Special Management Area	4.1%
Tunnel Spring	Clover/Delamar/S. Pahroc/Irish	High Value Habitat	100%

Environmental Consequences

Impacts of Proposed Action

Full suppression tactics used to limit impacts and prevent spread of non-native grasses may have short-term impacts to wilderness character, but would enhance the natural characteristics of wilderness in the long-term. Impacts from fire management activities include visual impact from retardant, but the use of retardant reduces surface disturbance from line construction. Localized impacts to vegetation may occur if motorized access is granted for a specific fire. However, MIST guidelines would be followed in an effort to minimize impacts to wilderness character. Actions deemed necessary by the Incident Commander for public and firefighter safety could cause short-term impacts to resources such as vegetation, wildlife, and weeds.

Post-fire Emergency Stabilization and/or Rehabilitation seeding or planting treatments, if successful, would benefit wilderness by restoring natural vegetation communities or establishing a less fire-prone community even if non-native species are approved. Fire management planning may be altered in order to protect cultural resources, which could hinder fire management objectives.

Within the Sawmill fire burn, ponderosa seedlings will be planted on areas with overstory mortality of 40% or more. Given that ponderosa pine ecosystems are rare in this region, this action will help insure the long term viability of this particular stand. Without planting, it is very likely that the soils in the area will erode, invasive species will dominate, and the stand will convert to a pinyon pine woodland. No mechanical treatments will occur under this treatment.

Impacts of No Action

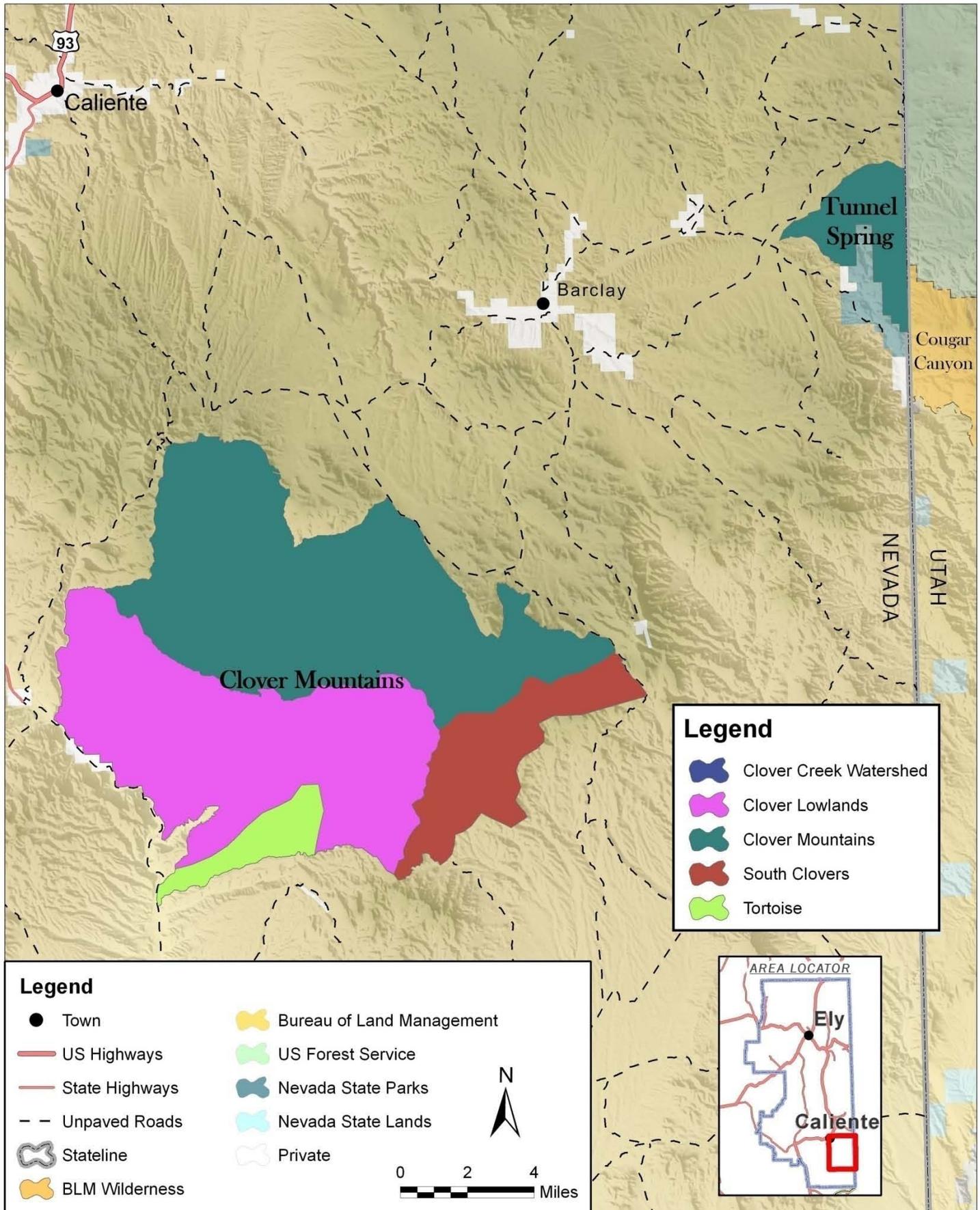
The No Action would not alter fire management program activities, therefore impacts would be the same as the proposed action.

Fish and Wildlife

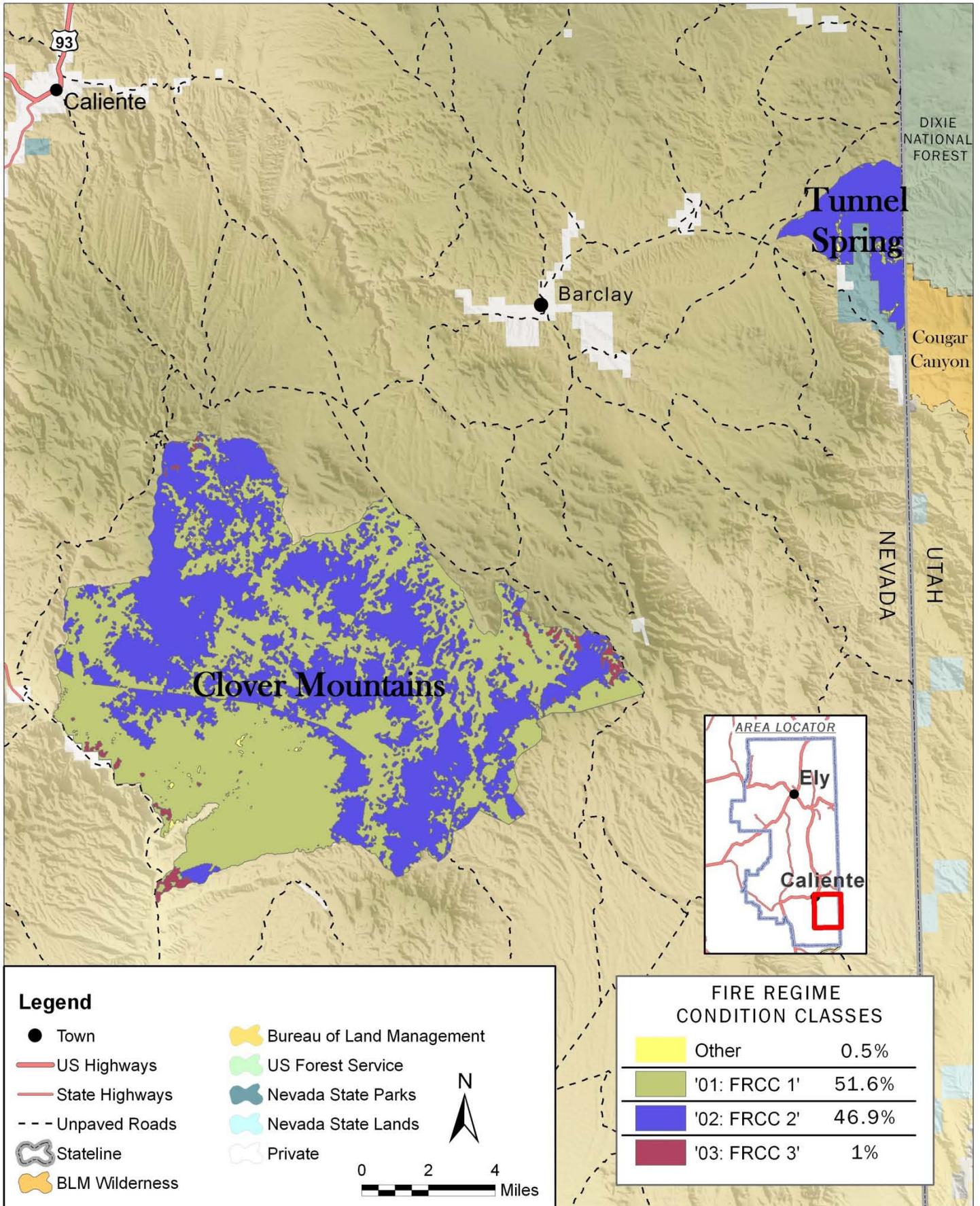
Affected Environment

Fish, such as various minnows (*Cyprinidae* family), may be found in the perennial streams within wilderness. The Nevada Department of Wildlife stocks Beaver Dam Wash, which runs through Tunnel Spring Wilderness, with rainbow trout (*Oncorhynchus mykiss*).

MAP 9: FIRE MANAGEMENT UNITS IN WILDERNESS



MAP 10: FIRE REGIME CONDITION CLASSES IN WILDERNESS



Wildlife species characteristic of the Great Basin, and to a degree, the Mojave Desert, are supported by the diverse habitat types found in these areas. Key Habitats are associated with each ecological system described in Appendix D. Key Habitats can be used to infer likely occurrences of wildlife species assemblages when survey data is lacking, as is the case for most species in these wilderness areas. Key Habitats include cliffs and canyons, intermountain cold desert scrub, intermountain rivers and streams, lower montane woodlands, Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, and sagebrush (Wildlife Plan Action Team 2006).

Hunting and trapping are permitted in wilderness subject to applicable State and Federal laws and regulations. Non-commercial shed antler collection also occurs. Both wilderness areas are within hunt unit 242. No wildlife water developments exist in either wilderness. However, the Clover Mountains Wilderness has one perennial stream and 20 documented developed and undeveloped springs while Tunnel Spring Wilderness has two perennial streams and two documented developed springs for wildlife water sources.

Small game and furbearers in the project area include black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), kit fox (*Vulpes macrotis*), bobcat (*Lynx rufus baileyi*), and coyote (*Canis latrans*). Nongame species of mammals, reptiles, and birds are diverse and provide the prey base for the predators of the area.

Big Game

The primary big game species that occupy these areas are Rocky Mountain elk (*Cervus elaphus nelsoni*) and mule deer (*Odocoileus hemionus*).

Rocky Mountain Elk — Elk primarily graze on grasses throughout the year but supplement their diet with forbs in the spring and fall and with shrubs, tree bark and twigs in the winter. The Clover Mountains Wilderness encompasses 50,743 acres of potential year round elk use habitat and 34,148 acres of potential summer habitat. The Tunnel Spring Wilderness is considered entirely as potential year round habitat. No current population estimates exist for either wilderness area. Water availability is a limiting factor for distribution within both wildernesses.

Mule Deer — Deer generally browse on forbs, grasses, and shrubs depending on the time of year. For instance, forbs and grasses are most important in spring and summer while shrubs are most utilized during winter and the dry summer months. The Clover Mountains Wilderness encompasses approximately 40,022 acres of winter range and approximately 45,398 acres of mature summer habitat. Tunnel Spring Wilderness is considered mature summer habitat in its entirety, but summer distribution within both wildernesses is limited by water availability.

Upland Game

Upland game species primarily consist of Gambel's Quail (*Callipepla gambelii*) and Chukar Partridge (*Alectoris chukar*).

Gambel's Quail — This bird is native to the Mojave Desert and the southern portion of the Great Basin. Their primary diet consists of leaves, grasses, and seeds. Insects may be utilized during nesting season. Water is a limiting factor and population abundance fluctuates during drought years, however, small game wildlife water developments help stabilize population numbers.

Chukar Partridge — This species from the pheasant family was originally introduced from Pakistan as an upland game bird. It can be found on rocky hillsides or open and flat desert with sparse grassy vegetation. They primarily eat seeds but will forage on some insects (Christensen 1996).

Migratory Birds

Many migratory and resident bird species likely occur in these areas. The following data reflect survey blocks and/or incidental sightings of bird species in or near the Clover Mountains Wilderness from the Atlas of the Breeding Birds of Nevada (Floyd et al. 2007). These data represent birds that were confirmed, probably, or possibly breeding within or near the Clover Mountains Wilderness. These data are not comprehensive, and additional species not listed here may be present. No survey blocks or incidental sightings occur within the wilderness.

Survey blocks with similar vegetation as this area contained the following bird species: Gambel's quail, ash-throated flycatcher (*Myiarchus cinerascens*), Say's phoebe (*Sayornis saya*), Western kingbird (*Tyrannus verticalis*), Western scrub-jay (*Aphelocoma californica*), pinyon jay (*Gymnorhinus cyanocephalus*), juniper titmouse (*Baeolophus ridgwayi*), bushtit (*Psaltriparus minimus*), rock wren (*Salpinctes obsoletus*), Bewick's wren (*Thryomanes bewickii*), blue-gray gnatcatcher (*Poliopitila caerulea*), gray vireo (*Vireo vicinior*), black-headed grosbeak (*Pheucticus melanocephalus*), spotted towhee (*Pipilo maculatus*), black-chinned sparrow (*Spizella atrogularis*), and black-throated sparrow (*Amphispiza bilineata*).

The following data reflect survey blocks and/or incidental sightings of bird species in or near the Tunnel Spring Wilderness from the Atlas of the Breeding Birds of Nevada (Floyd et al. 2007). These data represent birds that were confirmed, probably, or possibly breeding within or near the Tunnel Spring Wilderness. These data are not comprehensive, and additional species not listed here may be present. No survey blocks or incidental sightings occur within the wilderness.

Survey blocks with similar vegetation as this area contained the following bird species: pie-billed grebe (*Podilymbus podiceps*), mallard (*Anas platyrhynchos*), peregrine falcon (*Falco peregrinus*), American coot (*Fulica americana*), cliff swallow (*Petrochelidon pyrrhonota*), white-throated swift (*Aeronautes saxatalis*), American robin (*Turdus migratorius*), common raven (*Corvus corax*), canyon wren (*Catherpes mexicanus*), yellow warbler (*Dendroica petechia*), brown-headed cowbird (*Molothrus ater*), house finch (*Carpodacus mexicanus*), black-headed grosbeak (*Pheucticus melanocephalus*), spotted towhee (*Pipilo maculatus*), song sparrow (*Melospiza melodia*), belted kingfisher (*Ceryle alcyon*), American goldfinch (*Carduelis tristis*), and osprey (*Pandion haliaetus*).

Environmental Consequences

Impacts of Proposed Action

Authorized livestock activities and ground-disturbing methods relating to fire management activities, emergency stabilization and rehabilitation, route decommissioning, installation of signs, staging areas, and a pullout, could have localized, short term impacts on behavior and movement of individuals. According to the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic EIS (2007), the herbicides that would be used for Tamarisk and Russian olive treatments “are not likely to impact” when applied at typical application rates.

Best Management Practices outlined in the BLM Interim Management Guidelines regarding migratory birds would be followed. This would minimize impacts to migratory or resident birds stemming from ground disturbing activities such as ponderosa pine restoration activities, route decommissioning, vegetation restoration, fire management, or weeds treatments.

If horse gathers should be needed, short-term localized impacts may occur. However, in the long term wildlife would benefit from fewer impacts to springs and less competition for forage from wild horses. Horses that remain undetected may impact elk and deer by increasing competition for forage.

In the long-term, route restoration following decommissioning may help restore formerly disturbed vegetation communities associated with former vehicle routes, thus providing a less fragmented landscape for wildlife.

Recreational use may create temporary localized impacts to wildlife through displacement of individual animals; however, the recreational experience may also be improved through increased opportunities to observe wildlife if restoration projects are successful. Increased pedestrian, equestrian, vehicle traffic to staging areas (if constructed in the future), and installation of signs has the potential to introduce invasive non-native plants, including noxious weeds.

Impacts of No Action

In general, the impacts would be the same as the proposed action because fire management, weeds management, emergency stabilization and rehabilitation, and wild horse management etc. are guided by their own resource programs and may still occur in wilderness. However, the ponderosa pine restoration would not occur; therefore no impacts from this action would take place.



Aerial View of the Clover Mountains Wilderness

Grazing Uses

Affected Environment

Livestock grazing allotments in the Clover Mountains and Tunnel Spring Wilderness areas are managed entirely by the Ely District Office. Eight allotments overlap wilderness with one allotment (Private/Utah) in Tunnel Spring closed (See Table 3 on the next page and Maps 3 - 4 Pages 19 - 20), leaving seven active. Animal Unit Months (AUMs) not included in Table 3 that may be associated with the allotments include historic suspended, as well as mandatory and voluntary non-use AUMs, for conservation and protection purposes. Over recent years, particularly since 1996, actual use has been reduced due to the impacts of drought. Livestock numbers may vary based on rotational grazing systems and the terms and conditions of the individual term grazing permits.

Several range developments currently exist for the maintenance and support of livestock grazing. Existing range developments identified through administrative records and field reconnaissance within the wilderness areas are depicted in Maps 3 and 4 (Pages 19 - 20). In Clover Mountains

Wilderness there is a range fence and two corrals within the Cottonwood Allotment and two ranges fences within the Sheep Flat Allotment. For Tunnel Spring Wilderness there are several range fences within the Enterprise Allotment that are in or border the wilderness boundary.

The grazing permittee is responsible for maintenance of all livestock grazing facilities in the wilderness areas by cooperative agreements. Although access by motor vehicles may occur on a case-by-case basis after contacting the BLM Ely District Office, no scheduled access by motor vehicles for facility maintenance or livestock operations has been established.

Table 3. Grazing Allotments within Wilderness.

<i>Allotment (#)</i>	<i>Acres Within Wilderness</i>	<i>Grazing Period</i>	<i>AUMs*</i>	<i>Wilderness Area</i>
Barclay (11004)	1087	5/16 to 11/15	1971	Tunnel Spring
Cottonwood (21021)	37,523	5/1 to 10/31	1296	Clover Mountains
Enterprise (11031)	623	5/1 to 10/31	1261	Tunnel Spring
Garden Springs (01065)	924	Cattle and Horses: 10/1 to 5/31	2809	Clover Mountains
Henrie Complex (11034)	3593	11/1 to 4/30	1380	Clover Mountains
Pennsylvania (01056)	10,990	5/1 to 10/31	588	Clover Mountains
Private/Utah	3595	Retired	N/A	Tunnel Spring
Sheep Flat (01069)	32,636	6/1 to 9/30	1977	Clover Mountains

*AUMs are for the entire allotment (wilderness and non-wilderness)

Environmental Consequences

Impacts of Proposed Action

The Proposed Action for management of livestock grazing provides specific guidance for the maintenance of facilities and activities in support of a livestock grazing program in contrast to the No Action. Regular maintenance of structures in support of livestock grazing would be distinguished from emergency operations. This may enhance the ability of the BLM to manage livestock grazing activities within wilderness and eliminate time delays in approval for access to maintain range developments and respond to emergency situations.

Grazing uses may benefit from fire suppression by preventing structures and installations from being consumed as a result of wildland fire. Emergency stabilization and rehabilitation efforts and treatments for the spread of noxious and invasive weeds could result in the temporary closure of portions of allotments. Better range conditions would provide long-term benefits for grazing uses. According to the Record of Decision for the Vegetation Treatments Using

Herbicides on BLM lands in 17 Western States Programmatic EIS (2007), herbicides that would be used for Tamarisk and Russian olive treatments “are not likely to impact” livestock when applied at typical application rates.

Impacts of No Action

Impacts to and from other resources would not differ from the proposed action.

Invasive Non-native Plant Species (includes noxious weeds)

Affected Environment

Noxious and non-native invasive weeds are frequent obstacles to managing wilderness character in the Central Basin and Range and Mojave Basin and Range Ecoregions. Non-native invasive species are defined by Executive Order 13112 as “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Alien refers to a species that did not evolve in the environment in which it is found. Noxious weeds are any plant designated by a Federal, State, or County government as injurious to public health, agriculture, recreation, wildlife, or property. (Sheley, Petroff, and Borman 1999).

Noxious weeds in Nevada are classified by the Nevada Department of Agriculture and the Plant Protection Act (2000) administered by the USDA-APHIS. Category A weeds are weeds that are generally not found or that are limited in distribution throughout the State. Such weeds are subject to active exclusion from the State, active eradication wherever found, and active eradication from the premises of a dealer of nursery stock. Category B weeds are weeds that are generally established in scattered populations in some counties of the State. Such weeds are subject to active exclusion where possible and active eradication from the premises of a dealer of nursery stock. Category C weeds are weeds that are generally established and generally widespread in many counties of the State. Such weeds are subject to active eradication from the premises of a dealer of nursery stock.

Weed management is further challenged by extensive fires that occurred in 2005 in Clover Mountains Wilderness, in part because of invasive annual grasses. A very wet winter and spring produced high densities of red brome and cheatgrass. These species tend to return in higher densities after fire leading to a feedback loop that maintains an unnatural fire regime and a less diverse vegetation community. Another challenge stems from the Union Pacific Railroad right of way corridor adjacent to the southwest portion of Clover Mountains Wilderness. This corridor is infested with multiple noxious weed species such as Russian knapweed (*Acroptilon repens*), Sahara mustard (*Brassica tournefortii*), Musk thistle (*Carduus nutans*), hoary cress (*Lepidium draba*), tall whitetop (*Lepidium latifolium*), Scotch thistle (*Onopordum acanthium*), and



Russian olive in Tunnel Spring Wilderness

Tamarisk. There is also rip-gut brome (*Bromus diandrus*), red brome and cheatgrass scattered within the wash, providing a reservoir for possible future infestations into wilderness.

Tamarisk is classified in Nevada as a Category C noxious weed. There are 43 documented infestations of Tamarisk in the Clover Mountains and five in Tunnel Spring. (See Map 2, Page 17). There are 54 known species of Tamarisk, which are native to North Africa, the Mediterranean, and the Middle East. Tamarisk is fire adapted, each plant can produce up to 500,000 wind-blown seeds, the leaves and flowers contain few nutrients for wildlife, and it tends to grow in riparian areas or where water is near the surface. Native aquatic systems are disrupted because of long tap roots that are capable of intercepting deep water tables and increased salinity of the surrounding soil after leaves drop. In turn, native species such as willow and mesquite are displaced leaving poor habitat and forage for wildlife. After burning or cutting, Tamarisk can easily resprout making it difficult to eliminate (Muzika and Swearingen 2006a).

Russian olive is a non-native that has been classified in some states as a noxious weed. At this time, Nevada only considers it a non-native invasive weed. In general, Russian olive is a small shrub or tree with long thorns along the branches. In these wilderness areas it is found in riparian areas and can grow up to 30 feet in height. Russian olive primarily reproduces by seed and is successful within a range of soil and moisture conditions. Russian olive has high rates of

evapotranspiration and can outcompete native vegetation by interfering with native plant succession and nutrient uptake. Russian olive fixes nitrogen in its roots; therefore it can grow on bare, mineral substrates and become the principal riparian vegetation in areas where overstory cottonwoods are no longer alive. While Russian olive does provide edible fruits for birds, studies have shown that number of bird species tend to be higher in riparian areas dominated by native vegetation (Muzika and Swearingen 2006b).

Cheatgrass dominated landscapes generally have increased fire frequency and intensity compared to areas with native vegetation because it leaves behind abundant and persistent fine fuels that promote hot, fast fires. Whereas dead native annual species may only persist on the landscape up to one year, dead cheatgrass stems and blades can last up to two years. Fires generated from cheatgrass are usually not hot enough to burn large shrubs such as creosote bush, but can burn small shrubs such as white bursage (*Ambrosia dumosa*). Prescribed cattle grazing is a highly effective tool to control litter created by annual grasses.

Red brome is an invasive, annual grass present in small densities throughout the Clover Mountains Wilderness and can be found in blackbrush (*Coleogyne ramosissima*), creosote bush (*Larrea tridentata*), and creosote bush-saltbush (*Atriplex* spp.)-blackbrush vegetation communities. These invasive annual grasses displace native perennial shrub, grass, and forb species because of their ability to germinate quicker and earlier than native species, thus outcompeting natives for water and nutrients. It can also grow on all types of topography. It is good forage for cattle when green, but once it dries out it is very poor forage.

A risk assessment for noxious weeds was conducted for these wilderness areas (Appendix E). For this project, the overall risk factor is considered moderate. A risk rating of moderate requires the development of preventative management measures for the proposed project to reduce the risk of introduction or spread of noxious weeds into the area.

Environmental Consequences

Impacts of Proposed Action

In general, the management actions outlined in this plan apply best management practices and standard operating procedures that are focused on preventing the spread of weeds by vectors such as vehicles or equipment. The ability to detect noxious and invasive weeds would be enhanced over the No Action alternative through a greater emphasis on regular wilderness monitoring. Weed treatment procedures within these areas would be clearly defined and compatible with limiting or eliminating noxious and invasive weeds. If designated over the life of this Plan, high-use staging areas and designated trails could be infested by weeds through vehicle or human vectors.

Invasive annual grass treatment procedures would be clearly defined in the Proposed Action. This may enhance the ability of the BLM to control, contain, or eliminate certain invasive grasses within these areas and prevent or diminish an annual grass fire cycle which could further harm the native vegetation in the area. If post-fire Emergency Stabilization and Rehabilitation activities should fail, then noxious and invasive weeds may increase in burned areas. However, if

efforts are successful, then post-fire weed establishment or expansion would be minimized or stopped.

The continued presence and potential increase of recreational activities, including camping, hiking, and horse packing, may contribute to the spread of noxious and invasive species as a result of trampling of native species and the possibility of spreading noxious and invasive seeds into wilderness. Pack stock animals used for recreational horseback riding and routine livestock maintenance would be fed with packed-in, certified weed-free feed, decreasing their contribution to weed infestation problems and the impact of incidental recreational horse browsing on vegetation.

Rehabilitation of small-scale disturbances would include methods such as decompaction, scarifying, and pitting soil that may stimulate the growth of noxious and invasive weeds. Future approved vegetation restoration projects may cause small, local disturbances that could increase local noxious and invasive weed populations. Allowable motorized access could occur through emergency stabilization and rehabilitation, wildlife management, livestock permittee administrative access, or fire-management; such access may cause disturbances that encourage weed establishment, or may introduce additional weeds into the wilderness.

Livestock grazing management seeks to achieve or maintain desired rangeland health and healthy rangelands are less vulnerable to weed infestations. However, livestock can carry seeds and plant parts of noxious and invasive weed species. Monitoring of high risk areas should minimize possible infestations. Cattle would generally be excluded from areas of new revegetation until deemed successful to prevent livestock from trampling and grazing young plants (BLM 2008).

Impacts of Site-Specific Ponderosa Pine Restoration

The potential to spread weeds could occur if weed seeds were attached to the clothing of field crews hiking into wilderness. However, best management practices and standard operating procedures outlined in the Plan that are focused on preventing the spread of weeds by vectors such as vehicles, humans, or equipment will be followed; thereby diminishing the risk.

Impacts of No Action

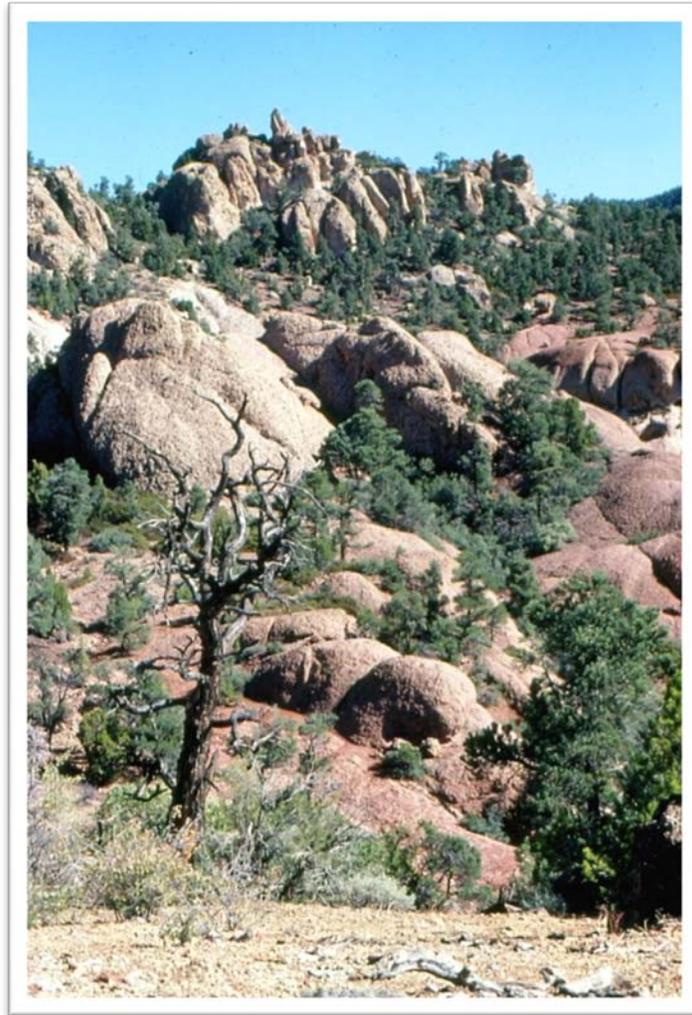
Weed introduction from individuals hiking and from vehicles along wilderness boundary roads may occur. Weed monitoring would occur approximately every 5 years along roads, cherry-stemmed routes, and around springs reasonably accessible from roads. Compared to the proposed action, weed treatment would be sporadic and would not occur in a timely manner. Additionally, when weeds are found, site-specific NEPA analysis would not be guided by the treatment options and priorities outlined in the proposed action, further slowing down the ability to treat weeds in a timely manner.

Recreation Uses

Affected Environment

Year round visitation to the wilderness areas is possible, although visitation may be limited during winter when snow is common, especially Tunnel Spring Wilderness, and summer when temperatures surpass 100°F in the Clover Mountains Wilderness. Although the amount of annual visitation is unknown, it is presumed to be low. These wilderness areas are fairly remote from large population centers such as Las Vegas, Nevada compared to other wilderness areas and recreation opportunities in Clark County.

Recreational activities include hiking, camping, wildlife viewing, fishing (Tunnel Spring) nature study, and hunting. Hunt Unit 242 encompasses both wilderness areas. Elk, mule deer, and wild turkeys (*Meleagris gallopavo*) are some of the popular species. The rugged peaks, cliffs, and remote canyons offer destinations for hikers and climbers. There are no known geocaches,



Clover Mountains Wilderness

letterboxes, or summit registers. An unknown number of trails are likely to exist that were created by wild horses and livestock.

No permits are required to visit, and there are no group size limits or camping restrictions, and no permits have been issued for commercial services at this time. The majority of these wilderness areas provide the opportunity to experience a sense of remoteness and isolation. There are numerous draws, ravines, rocky outcrops, ridges, and canyons that create secluded locales. These locales, the wilderness' large area, and low visitation combine to provide outstanding opportunities for solitude. However, flat topography, sparse vegetation, and periodic sights and sounds of vehicles in adjacent lands and aircraft flying overhead, may decrease experiences of solitude.

Environmental Consequences

Impacts of Proposed Action

Some recreational uses may be temporarily impacted with activities related to weeds management, fire management, emergency stabilization and rehabilitation, and the ponderosa pine restoration. Grazing uses may create temporary localized impacts to recreationists seeking a wilderness experience. The potential future creation of staging areas may reduce instances of vehicle incursions. A monitoring system would be established to prevent or respond to degradation of trails (if designated in the future), campsites, solitude, additional foot-worn hiking paths, and recreational impacts to other resources.

Impacts of No Action

Localized impacts on recreation from the ponderosa pine restoration would not occur. Lack of ponderosa pine regeneration could have long-term localized ecological impacts that would in turn diminish recreational opportunities in the ponderosa pine area.

Special Status Animal Species

Affected Environment

State Protected and BLM Sensitive Species

In addition to species federally protected under the Endangered Species Act, Nevada BLM Special Status Species include fish and wildlife that are classified as protected under Nevada Revised Statute (N.R.S.) 501.110. Additionally, Nevada BLM includes Sensitive Species, which are defined as taxa that are not federally or State protected. It is BLM policy to provide the same level of protection for sensitive species as a federal candidate species (BLM Manual 6840.06). The manual states, *BLM shall implement management plans that conserve candidate species and their habitat and ensure that actions authorized, funded, or carried out do not contribute to the need for the species to become listed.*

According to the Nevada Natural Heritage Database (State of Nevada Department of Conservation and Natural Resources), Ely RMP (BLM 2008), and Atlas of Breeding Birds of Nevada (Floyd et al. 2007), the following BLM sensitive species may be present within the Clover Mountains and Tunnel Spring Wilderness Areas: golden eagle (*Aquila chrysaetos*), pinyon jay, juniper titmouse, gray vireo, peregrine falcon, Meadow Valley Wash speckled dace (*Rhinichthys osculus* ssp.), Meadow Valley Wash desert sucker (*Catostomus clarki* ssp.), and desert bighorn sheep (*Ovis canadensis nelsoni*).

Additional species may be present because extensive surveys within the wilderness have not been conducted. It is likely that various BLM special status and sensitive species may be discovered in the future within the boundaries of wilderness.

Table 4 lists the Nevada BLM special status and sensitive wildlife species that may occur in the project area, along with its key habitat, habitat components, and whether the species is State protected.

Table 4. Nevada BLM Special Status Fish & Wildlife Species That Do or May Occur in the Wilderness Areas.

<i>Special Status Animal Species</i>	<i>Scientific Name</i>	<i>State of Nevada Protected Species</i>	<i>Key Habitat</i>	<i>Key Habitat Element</i>
Virgin River Spinedace	<i>Lepidomeda mollispinis mollispinis</i>	Yes	Intermountain rivers and streams	Rocky riffles, runs, and pools
Banded Gila Monster	<i>Heloderma suspectum cinctum</i>	Yes	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Rocks- canyons-rock outcrops
Sonoran Mountain Kingsnake	<i>Lampropeltis pyromelana</i>	Yes	Cliffs and canyons	Rocky slopes
Common Chuckwalla	<i>Sauromalus ater</i>	No	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Cliffs and canyons.	Rocks- canyons-rock outcrops
Gilbert's Skink (AKA western red-tailed skink)	<i>Eumeces gilberti rubricaudatus</i>	No	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Sagebrush	Dead/down plant debris, wash transition zone
Red-Naped Sapsucker	<i>Sphyrapicus nuchalis</i>	No	Intermountain rivers and streams, Lower montane woodlands	Mountain-mahogany riparian ecotone
LeConte's Thrasher	<i>Toxostoma lecontei</i>	Yes	Mojave/Sonoran warm desert scrub	Saltbush

<i>Special Status Animal Species</i>	<i>Scientific Name</i>	<i>State of Nevada Protected Species</i>	<i>Key Habitat</i>	<i>Key Habitat Element</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>	No	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Sagebrush	Saltbush, yucca spp., mature sagebrush
Bendire's Thrasher	<i>Toxostoma lecontei</i>	Yes	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Yucca spp.
Crissal Thrasher	<i>Toxostoma crissale</i>	No	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Shrubs and wash transition zone
Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>	No	Lower montane woodlands	Cone-bearing stands
Burrowing Owl	<i>Athene cunicularia</i>	No	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub	Sandy soils
Prairie Falcon	<i>Falco mexicanus</i>	No	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Cliffs and canyons.	Rock outcrops
Ferruginous Hawk	<i>Buteo regalis</i>	Yes	Sagebrush, Lower montane woodlands, cliffs and canyons.	Rock ledges, woodland rock transition zone
Swainson's Hawk	<i>Buteo swainsoni</i>	No	Intermountain rivers and streams (lowland riparian)	Mature overstory
American Peregrine Falcon	<i>Falco peregrinus anatum</i>	Yes	Cliffs and canyons	Ledges
Desert Bighorn Sheep	<i>Ovis canadensis nelsoni</i>	No	Mojave mid-elevation mixed desert scrub, Mojave/Sonoran warm desert scrub, Cliffs and canyons.	Rocky slopes, outcrops, and ledges
Preble's Shrew	<i>Sorex preblei</i>	No	Sagebrush	Grasses/forbs
Pallid Bat	<i>Antrozous pallidus</i>	No	Cliffs and canyons	Rocky slopes
Long-eared Myotis	<i>Myotis evotis</i>	No	Lower montane woodlands, cliffs and canyons	Mature stands/snags/cavities, crevices
Allen's Big-eared Bat	<i>Idionycteris phyllotis</i>	Yes	Lower montane woodlands	Mature stands/snags/cavities
Small-footed Myotis	<i>Myotis ciliolabrum</i>	No	Lower montane woodlands	Mature stands/snags/cavities
Fringed Myotis	<i>Myotis thysanodes</i>	Yes	Lower montane woodlands	Mature stands/snags/cavities

<i>Special Status Animal Species</i>	<i>Scientific Name</i>	<i>State of Nevada Protected Species</i>	<i>Key Habitat</i>	<i>Key Habitat Element</i>
Cave Myotis	<i>Myotis velifer</i>	No	Cliffs and canyons	Caves and mines

Environmental Consequences

Impacts of Proposed Action

Authorized livestock activities and ground-disturbing methods relating to fire management activities, emergency stabilization and rehabilitation, and ponderosa pine restoration could have localized, short term impacts on behavior and movement of individuals. According to the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic EIS (2007), the herbicides that would be used for Tamarisk and Russian olive treatments “are not likely to impact” when applied at typical application rates.

Following Best Management Practices in accordance with the Ely District Approved Resource Management Plan (2008) would minimize impacts to special status migratory or resident birds stemming from ground disturbing activities such as vegetation restoration, fire management, or weeds treatments.

If horse gathers should be needed, short-term localized impacts may occur. However, in the long term some Nevada BLM special status and sensitive wildlife species may benefit from fewer impacts to springs and less competition for forage from wild horses.

Future potential wildlife activities such as species augmentation and transplants or installation of wildlife water developments would have to undergo their own NEPA analysis.

Impacts of No Action

In general, the impacts would be the same as the proposed action because fire management, emergency stabilization and rehabilitation, weeds management etc. are guided by their own resource programs and may still occur in wilderness. Ponderosa pine restoration would not occur; therefore no short-term impacts would take place. However, a continually degrading ponderosa pine community may have long-term impacts to wildlife species dependent upon this type of vegetation community.

Special Status Plant Species

Affected Environment

Nevada BLM Special Status Species include plants that are federally listed, proposed, or candidate species under the Endangered Species Act or plant species declared by the State Forester Firewarden to be threatened with extinction pursuant to Nevada Revised Statutes (N.R.S.) 527.260-.300. According to N.R.S. 527.270, *no member of its kind may be removed or destroyed at any time by any means except under special permit issued by the state forester firewarden.*

Upon review of the Nevada Natural Heritage database, no documented BLM sensitive plant species were found within these wildernesses. However, this may not represent actual species present because extensive surveys within the wilderness have not been conducted. It is likely that various other BLM sensitive plant species may be discovered in the future within the boundaries of wilderness. Table 5 lists the Nevada BLM special status plant species that may occur in the project area, along with its key habitat, habitat components, and whether the species is State protected.

Table 5. Nevada BLM Special Status Plant Species with Potential to Occur in the Wilderness Areas.

<i>Special Status Plant Species</i>	<i>Scientific Name</i>	<i>State of Nevada Protected Species</i>	<i>Key Habitat</i>	<i>Key Habitat Element(s)</i>
Las Vegas Bearpoppy	<i>Arctomecon californica</i>	Yes (Critically Endangered)	Mojave mid-elevation mixed desert scrub	Gypsum-rich soils
White Bearpoppy	<i>Arctomecon merriamii</i>	No	Mojave mid-elevation mixed desert scrub	Gypsum-rich soils
Eastwood Milkweed	<i>Asclepias eastwoodiana</i>	No	Mojave mid-elevation mixed desert scrub, Sagebrush	Wide variety of basic (pH usually 8 or higher) soils
Sheep Mountain Milkvetch	<i>Astragalus amphioxys</i> var. <i>musimonum</i>	No	Mojave mid-elevation mixed desert scrub	Microsites with enhanced run-off
Needle Mountains Milkvetch	<i>Astragalus eurylobus</i>	No	Mojave mid-elevation mixed desert scrub	Deep, barren, sandy, gravelly, or clay soils
Black Woolypod	<i>Astragalus funereus</i>	No	Mojave mid-elevation mixed desert scrub, Cliffs and canyons	Dry, open scree, talus, or gravelly substrates
Halfring Milkvetch	<i>Astragalus mohavensis</i> var. <i>hemigyris</i>	No	Mojave mid-elevation mixed desert scrub,	Carbonate gravels and derivative soils

<i>Special Status Plant Species</i>	<i>Scientific Name</i>	<i>State of Nevada Protected Species</i>	<i>Key Habitat</i>	<i>Key Habitat Element(s)</i>
Mokiak Milkvetch	<i>Astragalus mokiacensis</i>	No	Mojave mid-elevation mixed desert scrub,	Sandy soils
Cane Spring Suncup	<i>Camissonia megalantha</i>	No	Mojave mid-elevation mixed desert scrub, Cliffs and canyons	Dry, open, loose soils on sandy to gravelly flats, slopes, or scree
Nevada willowherb	<i>Epilobium nevadense</i>	No	Lower montane woodland	Slopes with limestone outcrops or talus
Las Vegas Buckwheat	<i>Eriogonum corymbosum</i>	No	Mojave mid-elevation mixed desert scrub	Gypsum-rich soils
Clokey Buckwheat	<i>Eriogonum heermannii</i> var. <i>clokeyi</i>	No	Mojave mid-elevation mixed desert scrub, Cliffs and canyons	Carbonate outcrops, talus, scree, and gravelly washes and banks
Blue Diamond Cholla	<i>Opuntia whipplei</i> var. <i>multigeniculata</i>	Yes (Critically Endangered)	Mojave mid-elevation mixed desert scrub, Cliffs and canyons	Dry, open carbonate ledges, crevices, and loose rock
Beatley Scorpionflower	<i>Phacelia beatleyae</i>	No	Mojave mid-elevation mixed desert scrub, Cliffs and canyons	Dry, open, nearly barren scree and loose gravelly soils
Clarke phacelia	<i>Phacelia filiae</i>	No	Mojave mid-elevation mixed desert scrub,	Dry, open, nearly barren scree and loose gravelly soils
Parish's phacelia	<i>Phacelia parishii</i>	No	Mojave mid-elevation mixed desert scrub, Cliffs and canyons	Sparsely vegetated alkaline flats
Pygmy Poreleaf	<i>Porophyllum pygmaeum</i>	No	Mojave mid-elevation mixed desert scrub, Lower montane woodlands	Dry, open, relatively deep, rocky carbonate soils of alluvial fans and hillsides
Schlesser Pincushion	<i>Sclerocactus schlesseri</i>	Yes	Mojave mid-elevation mixed desert scrub	Open, stable or stabilized, gravelly, sandy silt or silty clay soils

Environmental Consequences

Impacts of Proposed Action

Destruction of individual undiscovered plants could occur from activities relating to fire management and grazing activities.

Impacts of No Action

Impacts would be the same as the proposed action.

Vegetation/Soils/Watershed

Affected Environment

Approximately 66% of Clover Mountains Wilderness is characterized by the Central Basin and Range Ecoregion (Great Basin) with the remaining 34% by the Mojave Basin and Range Ecoregion (Mojave Desert). Tunnel Spring is entirely within the Central Basin and Range Ecoregion (Great Basin). (U.S. Environmental Protection Agency 2007).

The Southwest Regional Gap Analysis Project (SWReGAP) was initiated in 1999 and mapped landscape features for a five-state region (AZ, CO, NV, NM, and UT), including ecological systems that are grouped into vegetation patterns (Lowry et al. 2005). Table 6 displays the ecological system and percent of each system within these wilderness areas based on SWReGAP information (USGS National Gap Analysis Program, 2005). In Appendix D, general plant species associated with each ecological system are described. Throughout the management area the integrity of these natural vegetation patterns is threatened by non-native invasive species.

Table 6. The Primary Ecological Systems Present within these Wilderness Areas by Estimated Percent Cover (Not all ecological systems displayed because of limited acreage represented within wilderness).

<i>Ecological System*</i>	<i>Key Habitat</i>	<i>Tunnel Spring</i>	<i>Clover Mountains</i>
Great Basin Pinyon-Juniper Woodland	Lower Montane Woodlands	51%	21.2%
Great Basin Foothill and Lower Montane Riparian Woodland and Shrubland	Intermountain Rivers and Streams	3.3%	2.1%
Inter-Mountain Basins Big Sagebrush Shrubland	Sagebrush	2.2%	1.8%
Great Basin Xeric Mixed Sagebrush Shrubland	Sagebrush	0.7%	1.5%
Inter-Mountain Basins Montane Sagebrush Steppe	Sagebrush	0.9%	4.4%
Inter-Mountain Basins Semi-Desert Shrub Steppe	Intermountain Cold Desert Scrub	0.4%	2.6%

<i>Ecological System*</i>	<i>Key Habitat</i>	<i>Tunnel Spring</i>	<i>Clover Mountains</i>
Mogollon Chaparral	Lower Montane Chaparral	31.2%	33.2%
Mojave Mid-Elevation Mixed Desert Scrub	Mojave Mid-Elevation Mixed Desert Scrub	N/A	16.5%
North American Warm Desert Bedrock Cliff and Outcrop	Cliffs and Canyons	0.02%	1.8%
Rocky Mountain Gambel Oak-Mixed Montane Shrubland	Lower Montane Woodlands	10.1%	10.2%
Sonora-Mojave Creosotebush-White Bursage Desert Scrub	Mojave/Sonoran Warm Desert Scrub	N/A	3.7%

*Description of Ecological System can be found in Appendix D.

Environmental Consequences

Impacts of Proposed Action

The large-scale ponderosa pine restoration will take place within an area of 1,190 acres. The primary vegetation communities in the area are Great Basin Pinyon-Juniper Woodland, Mogollon Chaparral, and Rocky Mountain Gambel Oak-Mixed Montane Shrubland. However, only a small percentage (2 acres of actual disturbance) of those acres will be temporarily/permanently disturbed by clearing brush with hand tools, installation of tree protectors, installing biodegradable planting mats, and trampling of small amounts of vegetation by field crews during restoration and monitoring. If the restoration is successful, impacts to the overall vegetation community will be beneficial by providing seedlings to facilitate regeneration of this ponderosa pine community. The Sawmill fire treatment (ponderosa pine seedling planting) as part of the ES & R plan is within the larger treatment area. This action will help reestablish the ponderosa stand after the high-severity fire.

There may be temporary disturbance to vegetation in the immediate vicinity of Tamarisk and/or Russian olive treatments. The eradication of noxious and invasive weeds will be beneficial to vegetation communities overall by preventing the potential of these weed sources to spread to other areas.

Very small amounts of vegetation may be temporarily impacted along cherry-stemmed or administrative access routes from authorized motorized access that may occur through future emergency stabilization and rehabilitation, wildlife management, grazing permittee administrative access, or fire management actions.

Approximately 4 miles (4 acres) of former vehicle routes will be decommissioned. Rehabilitating decommissioned routes will reduce or eliminate further unauthorized incursions and new plant growth will enhance the vegetation communities in proximity to these former routes.

Small areas of vegetation could be disturbed or destroyed if vegetation is cut back or removed to protect sensitive archaeological and historic resources, such as prehistoric rock art, from wildland fire.

Approved research on native plant communities, vegetation restoration projects, and monitoring could improve vegetation communities within wilderness. The prohibition of geocaching would prevent disturbance to vegetation that could occur through object burial and the development of social trails relating to geocaching.

Impacts of Site-Specific Control of Tamarisk and Russian olive

Herbicides could come into contact with and impact non-target plants through drift, runoff, wind transport, or accidental spills and direct spraying. Potential impacts include mortality, reduced productivity, and abnormal growth. However, implementing the associated standard operating procedures outlined in the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic EIS (2007) will minimize or eliminate these risks.

Impacts of No Action

Without the guidance of a management plan and subsequent monitoring, altered vegetation communities may persist or further degrade impacting wildlife habitat and increasing fire frequency and severity. Unmonitored recreational use of the wilderness areas could result in impacts to vegetation on foot-worn paths and at campsites.

Wilderness

Affected Environment

Wilderness is an area designated by Congress and defined by the Wilderness Act of 1964 as a place that “(1) generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.”

The WMP addresses management of the Clover Mountains (85,784) and Tunnel Spring (5,371 acres) Wilderness areas. Wilderness characteristics are described under four categories:

untrammelled, natural, undeveloped, and having outstanding opportunities for solitude or primitive and unconfined recreation.

Untrammelled

Trammels are modern human controls or manipulations which hinder and restrict components or natural processes of wilderness. The few trammeling activities that exist include various measures in the management of wildland fire, weeds, emergency stabilization and rehabilitation treatments, and removal of vegetation due to livestock grazing activities and the ponderosa pine restoration projects. Additional trammels are present in the form of authorized allotment fences and the two corrals in Clover Mountains Wilderness.

Natural

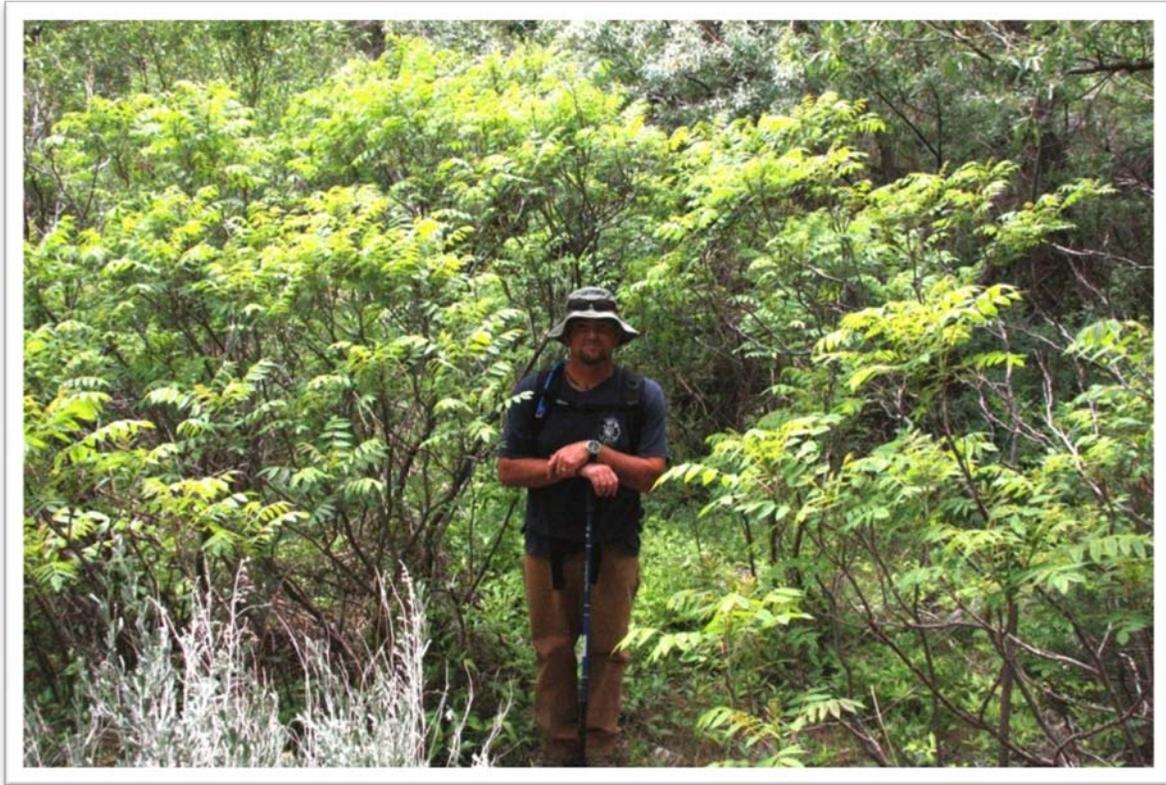
These areas appear to be substantially free from the effects of modern civilization, having been primarily affected by the forces of nature, and their primeval character is mostly preserved. Large wildfires occurred in the Clover Mountains Wilderness 2005, burning 23,005 acres. Some changes to the native vegetation composition have occurred, including the introduction of the non-native invasive species such as cheatgrass, red brome, Tamarisk, and Russian olive. Non-native chukar partridge, wild turkeys, and wild horses may also be present in both wilderness areas.

Undeveloped

The wilderness areas have few permanent improvements or other evidence of modern human presence or occupation. Structures that are found are range developments such as fence lines and corrals, as well as a few former vehicle routes. There may be an unknown number of aircraft crash sites, parts, and equipment as well.

Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation

The wilderness areas provide outstanding opportunities for people to experience solitude and primitive, unconfined recreation, including the values of inspiration and physical and mental challenge. Jagged peaks and ridges, rugged escarpments, streams, springs, and narrowly carved canyons in these areas provide excellent opportunities for solitude. The rugged terrain, steep rock faces, and diverse vegetation communities provide for primitive recreation opportunities such as hiking, camping, climbing, wildlife viewing, hunting, horseback riding, and nature study. Only the 14-day stay limit for camping may confine recreation opportunities for some visitors.



Wilderness Ranger in Tunnel Spring Wilderness

Environmental Consequences

Impacts of Proposed Action

Untrammeled

If the proposed action is implemented, trammeling activities associated with the ponderosa pine restoration projects, fire management, weeds treatments, and emergency stabilization and rehabilitation would occur. However, these trammeling actions are beneficial to the natural character of wilderness by helping to maintain or restore natural vegetation communities and the wildlife that depend on them. Grazing uses may create temporary localized impacts on the “untrammeled” character of the wilderness resource.

Natural

The natural and primeval character of the wilderness would be maintained or enhanced by fire management, emergency stabilization and rehabilitation, noxious and invasive weed and ponderosa pine restoration treatments.

Undeveloped

Decommissioning of former vehicle routes followed by vegetative restoration of those areas would improve the undeveloped qualities of the wilderness.

Outstanding Opportunities for Solitude and Primitive, Unconfined Recreation

Outstanding opportunities for solitude would be largely unaffected by the Proposed Action. Monitoring as well as vegetation or fire treatments may temporarily affect an individual visitor in the area. Overall, opportunities for primitive and unconfined recreation will remain outstanding throughout wilderness. Potential future trails may enhance the ability of some to enjoy primitive recreational opportunities. The Proposed Action allows for additional restrictions on recreation if monitoring indicates new damage to natural resources is occurring, which may help to maintain this wilderness characteristic.

Impacts of No Action

Untrammeled

Impacts would be the same as the Proposed Action.

Natural

Impacts would be the same as the Proposed Action except that weed management may not be as effective, thereby potentially effecting the overall naturalness of some of the vegetation communities. Also, the ponderosa pine restoration projects may be delayed, furthering the degradation of this relict ponderosa pine community.

Undeveloped

Impacts would be the same as the Proposed Action.

Outstanding Opportunities for Solitude or Primitive, Unconfined Recreation

Impacts would be the same as the Proposed Action.

Cumulative Impacts

The purpose of the cumulative impacts analysis for the proposed action is to evaluate the combined, incremental effects of human activity within the scope of the project. The Council on Environmental Quality (CEQ) regulations define scope and state that connected actions, cumulative actions, and similar actions should be included in the impact analysis (40 CFR 1508.25). The BLM Ely District RMP states that resource analysis will occur by watershed. The project area overlaps with five watersheds named in the RMP; Beaver Dam Wash (extends into Utah), Clover Creek North, Clover Creek South, Meadow Valley Wash North, and Tule Desert. Therefore the scope of the cumulative impacts analysis will be restricted to actions within these watersheds (See Map 11, Page 102). The CEQ formally defines cumulative impacts as follows:

‘...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time’ (40 CFR 1508.7).

Moreover, according to the 1997 CEQ Handbook *Guidelines for Assessing and Documenting Cumulative Impacts*, the cumulative impact analysis can be focused on those issues and resource values identified during scoping that are of major importance. The relevant issues identified during scoping for the proposed action relate to the following: fire management, the potential to spread noxious and non-native invasive weeds, special status species and impacts to wilderness character.

Past Actions

Five big game and five small game wildlife water developments exist within the area of analysis. In 2004, one other BLM administered wilderness area (Mormon Mountains Wilderness) was designated within the geographic scope of analysis. A wilderness management plan (Delamar Mountains, Meadow Valley Range, & Mormon Mountains) is currently in the approval process. Off-highway vehicle competition races and non-competitive use have occurred, as well as hunting and road maintenance associated with county roads and Union Pacific Railroad right of ways as well as fire management activities, including post-fire seeding have occurred.

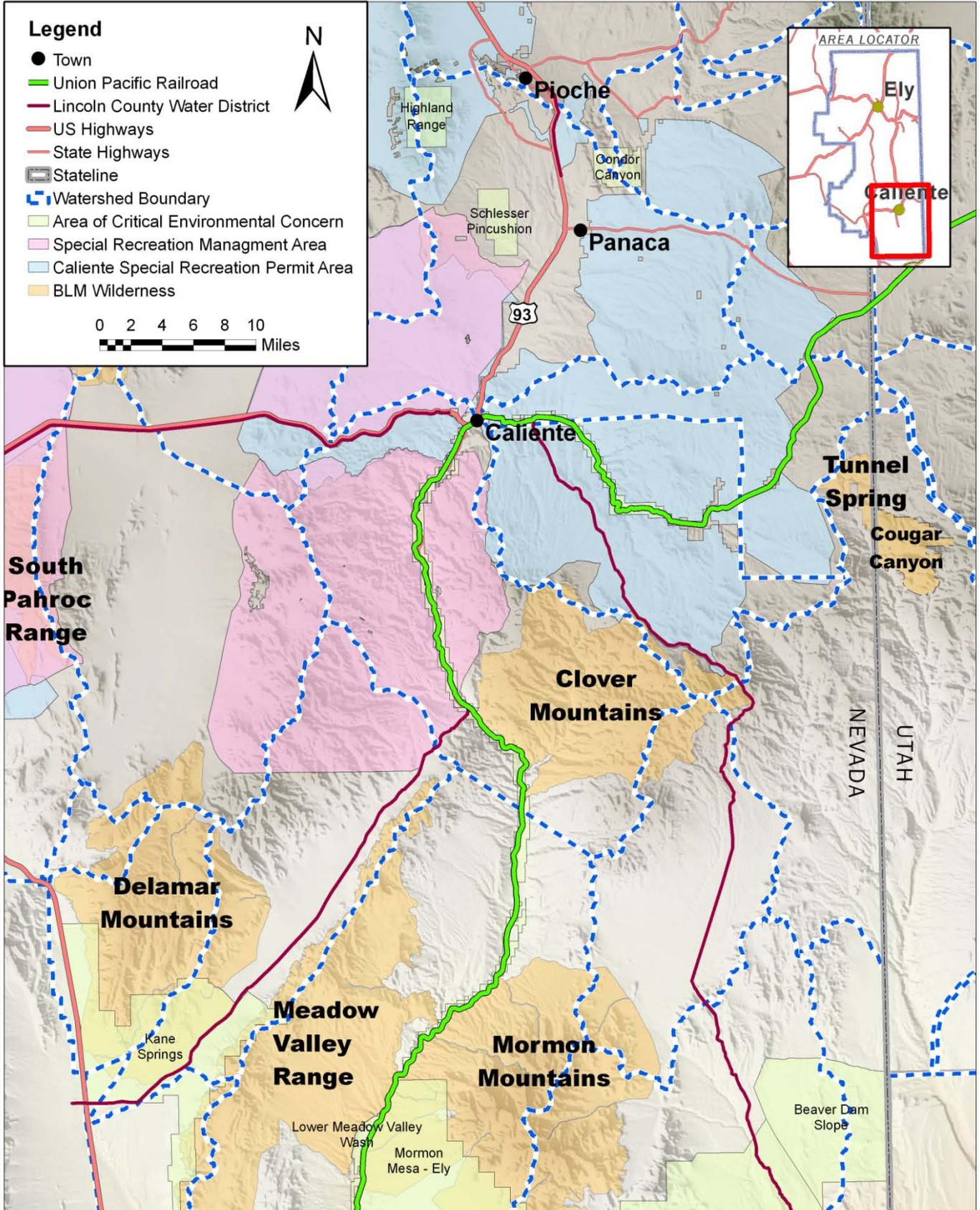
Present Actions

The geographic scope of the project area encompasses many land uses relating to public and private land. The Union Pacific Railroad and associated right of way has a line that runs through the planning area. The Ely District RMP designated the Lower Meadow Valley Wash ACEC (25,000 acres), the North Delamar Special Recreation Management Area (202,890 acres), and the Caliente Special Recreation Permit Area, of which about 200,000 acres are within the scope of analysis (See Map 11 Page 102). Recreation includes OHV and motorcycle competition races. Domestic livestock grazing, hunting, and non-competitive OHV use also occur within the area of analysis. Three wilderness areas were designated in Utah that are contiguous with Tunnel Spring Wilderness (Cougar Canyon, Slaughter Creek, and Doc’s Pass).

Reasonably Foreseeable Future Action Scenarios

The reasonably foreseeable future actions (RFFAs) within the affected area include the following: permanent road construction such as paving Kane Springs Road or reconstruction of Highway 318; rail lines to transport nuclear waste to Yucca Mountain; Department of Defense activities such as retrieval of downed aircraft; installation of multiple data collection devices associated with the Lincoln County Water Development Project; wildland fire management activities; installation of big and small game wildlife water developments; completion and implementation of other wilderness management plans in Utah; OHV races; right of ways for pipeline, power line, and/or groundwater projects such as the Lincoln County Water District (LCWD) water projects; drought; climate change.

MAP 11: GEOGRAPHIC AREA FOR CUMULATIVE EFFECTS



Fire Management

During the construction phase of any RFFAs, the potential for human-caused wildland fire would increase. During permitted OHV races and recreational OHV use, the potential for fire may increase. However, the BLM's objective regarding fire management is to manage wildland and prescribed fires as one of the tools in the treatment of vegetation communities and watersheds to achieve the desired range of condition for resource programs (BLM 2008). The primary goals of the Fire Management Units in the area of analysis are to employ wildland and prescribed fire, as well as non-fire treatments, in an effort to improve watershed cover conditions and to hinder the spread of non-native invasive annual grasses. Fire management goals described in the proposed action are the same; therefore, no avoidable incremental cumulative impacts from fire management would occur as a result of implementing the WMP.

Specifically, treatment of the Sawmill fire in the Clover Mountains will meet ESR objectives. Aerial seeding of 196 acres in wilderness for the Sawmill fire rehabilitation will reduce erosion while the ponderosa pine trees are becoming established. Secondly, the seeding will break the grass-fire cycle (D'antonio and Vitousek 1992, Brooks et al. 2004), in which post-fire establishment and increase in dominance of flammable invasive annual grasses fuel more frequent fires. Monitoring data from fires within the area of the Sawmill Fire report that cheatgrass can become dominant post fire if seeding treatments are not implemented.

Noxious and Non-native Invasive Weeds

Weeds have the potential to increase in distribution and abundance for any RFFAs during the construction phase. Post-fire ES & R projects seek to reduce the spread of invasive grasses. The proposed action would disturb a very small area compared to these other potential projects. Weed management would decrease the potential for weed reservoirs to exist inside wilderness boundaries. Moreover, best management practices and standard operating procedures that are focused on preventing the spread of weeds by vectors such as vehicles or equipment would be followed; thereby contributing a negligible effect to the overall cumulative impact to the potential spread of noxious and non-native and invasive weeds within these watersheds.

Fish and Wildlife

The biggest challenges to wildlife in the project area may be invasive grasses and climate change. Although climate change predictions are arguable, the Department of Interior Secretarial order No. 3226, Amendment No. 1 suggests that potential climate change issues be addressed in long-term planning documents. If predicted climate change should occur, the habitat that Nevada BLM special status and sensitive wildlife species depend upon could be impacted through decreased plant species diversity, increased fire frequency, and lack of water resources. At higher elevations or near springs, densities and competition may increase.

Grazing Uses

The possibility of more frequent or sustained droughts in the desert southwest may increase the need for maintenance of range developments to provide water for livestock operators.

Special Status Species

Individual wildlife may be affected negatively by displacement or disruption of normal behavioral patterns due to construction, project operations and maintenance, and site rehabilitation stemming from RFFAs and OHV use. In addition, some of these projects and actions could increase traffic, wildlife conflicts with humans, and competition among displaced individuals for habitat niches. Some of these actions may also decrease forage quality, quantity, and composition. Overall, the proposed action would disturb a very small area separate from other RFFA project areas (< 2 acres); thereby no incremental cumulative impact would occur to special status species within these watersheds.

Like other wildlife, the biggest challenges to special status or sensitive species in the project area may be invasive grasses and the potential for climate change. Although climate change predictions are arguable, the Department of Interior Secretarial order No. 3226, Amendment No. 1 suggests that potential climate change issues be addressed in long-term planning documents. If predicted climate change should occur, the habitat that Nevada BLM special status and sensitive wildlife species depend upon could be impacted through decreased plant species diversity, increased fire frequency, and lack of water resources. At higher elevations or near springs, densities and competition may increase.

Wilderness Character

By law (LCCRDA 2004), no buffer zones are created to protect wilderness from the influence of activities on land outside of wilderness boundaries. Wilderness character may be diminished by RFFAs but the proposed action has no administrative authority to prevent these impacts. Climate forecasts predict increasing heat and drought for the southwest United States. The potential to install future wildlife water developments may increase trammeling in wilderness, but will enhance the natural character by allowing some native wildlife to expand into suitable but water-limited habitat. Ponderosa pine restoration, as well as fire and weed management activities, may increase trammeling, but the goals are to restore natural vegetation communities that support the natural character of wilderness. Grazing uses may impact some wilderness characteristics, but are allowed by the Wilderness Act (1964). Potential future trail designation may impact the undeveloped character of wilderness, but may enhance opportunities for solitude in other areas of wilderness. Management goals for all wilderness areas in the area of analysis are similar; therefore the long-term cumulative contribution of effects to overall wilderness character would not occur or would be negligible.

Conclusion

The overall direction of wilderness management is to preserve wilderness characteristics. In combination with past, present, and reasonably foreseeable future actions, the proposed action does not meaningfully add to the cumulative impacts from those actions.

Monitoring Program

Monitoring of wilderness is a component of the Ely District Wilderness Program. Monitoring tracks the outcome of proposed activities on all wilderness characteristics, not just the one specific character that the activity was primarily intended to address. The WMP contains a detailed monitoring section on starting on Page 47.

Consultation and Coordination

A public notification will be posted on the Ely District Office website when this Environmental Assessment is completed, the Decision Record /Finding of No Significant Impact is signed and a 30-day appeal period initiated.

The Ely District Office mails a Consultation, Cooperation, and Coordination Letter to individuals and organizations that have expressed an interest in recreation/wilderness related actions. Those receiving the Consultation, Cooperation, and Coordination Letter have the opportunity to request from the Ely District Office more information regarding specific actions. Those requesting notification of recreation/wilderness actions are requested to respond if they want a copy of the final Environmental Assessment and signed Decision Record/Finding of No Significant Impact.

List of Preparers

Wilderness Management Plan and Environmental Assessment Compiled By

John M Wilson, NEPA Specialist, Great Basin Institute

Sendi Kalcic, NEPA Specialist, Great Basin Institute

Emily Harris, Wilderness Specialist, Great Basin Institute

BLM Employees Who Formed the Interdisciplinary Team Preparing and Reviewing this Plan

Heather Richter, Rangeland Management Specialist

Joe David, Planning and Environmental Coordinator

Sheri Wysong, Planning and Environmental Coordinator

Alan Kunze, Soils Specialist

Dave Jacobson, Wilderness Planner

Chris Linehan, Recreation Specialist

Ben Noyes, Wild Horse Specialist

Melanie Peterson, Hazardous Wastes Specialist

Karen Prentice, Emergency Stabilization and Rehabilitation Specialist

Kyle Teel, Fire Ecologist

Alicia Styles, Wildlife Biologist

Bonnie Million, Noxious and Invasive Weeds Specialist

Elvis Wall, Civil Engineering Technician, Native American Religious Concerns

Lynn Wulf, Archaeologist

Shawn Gibson, Archaeologist

BLM and Great Basin Institute Employees Who Provided Periodic Contributions or Expertise

Steve Smith, Nevada State Office Wilderness Coordinator

Christy White, Great Basin Institute

List of Agencies and Persons Consulted

Lincoln County Commissioners

Nevada Department of Wildlife

Acronyms and Abbreviations

ACEC	Area of Critical Environmental Concern
AMR	Appropriate Management Response (Fire)
AUM	Animal Unit Month
BLM	Bureau of Land Management
BLM-APHIS MOU	Memorandum of Understanding between the Bureau of Land Management and the United States Department of Agriculture, Animal and Plant Health Inspection Service
BLM-NDOW MOU	Memorandum of Understanding between the Bureau of Land Management and the Nevada Department of Wildlife, Wildlife Management in Nevada BLM Wilderness Areas (BLM MOU 6300-NV930-0402)
CEQ	Council on Environmental Quality
EA	Environmental Assessment
ES & R	Emergency Stabilization and Rehabilitation
FMP	Fire Management Plan
FMU	Fire Management Unit
FRCC	Fire Regime Condition Class
GPS	Global Positioning System
HMA	Herd Management Area (Wild Horses)
LCCRDA	Lincoln County Conservation, Recreation, and Development Act of 2004
MIST	Minimum Impact Suppression Tactics (Fire)
MRDG	Minimum Requirements Decision Guide
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act of 1969
OHV	Off-Highway Vehicle
RMP	Resource Management Plan
SHPO	State Historic Preservation Office
SOP	Standard Operating Procedure
USDA—APHIS	United States Department of Agriculture, Animal and Plant Health Inspection Service
WMP	Wilderness Management Plan

Glossary

Annual – Completing the life cycle in one growing season or single year.

Archaeological Resource – Any material remains of past human life or activities that are of archaeological interest.

Archaeological Site – The locations of past human activity, occupation or use, identifiable through inventory, historical documentation or oral history

Cherry Stem – A dead-end road or feature that forms a portion of a wilderness boundary and that remains outside the Wilderness.

Desert Varnish – a dark mineral coating found on exposed rock surfaces in arid environments (generally iron and manganese oxides and silica)

Fire Regime – The characteristics of fire in a given ecosystem, such as the frequency, predictability, intensity, and seasonality of fire.

Former Vehicle Route – A road used by motorized vehicles prior to wilderness designation that was closed to motorized or mechanical use by the designation of the area as wilderness.

Invasive – Describes a species, which takes over a new habitat where it was not previously found, often to the detriment of species that were there before.

Minimum Tool Requirement – The concept of minimum requirement comes from Section 4 (c) of the Wilderness Act of 1964. *“Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act...”*

Noxious Weed – Any plant designated by a federal, state, or county government as injurious to public health, agriculture, recreation, wildlife, or property.

Perennial – Active throughout the year, or living for many years.

Primeval – At or from the ancient original stages in the development of something.

Solitude – A quality of quiet remoteness or seclusion in places from which human activity is generally absent.

Untrammelled – Not limited or restricted, unrestrained by man.

Referenced Species

Common Name	Scientific Name
American coot	<i>Fulica americana</i>
American goldfinch	<i>Carduelis tristis</i>
American robin	<i>Turdus migratorius</i>
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>
Belted kingfisher	<i>Ceryle alcyon</i>
Bewick's wren	<i>Thryomanes bewickii</i>
Blackbrush	<i>Coleogyne ramosissima</i>
Black-chinned sparrow	<i>Spizella atrogularis</i>
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>
black-tailed jackrabbit	<i>Lepus californicus</i>
Black-throated sparrow	<i>Amphispiza bilineata</i>
Blue-gray gnatcatcher	<i>Poliophtila caerulea</i>
Bobcat	<i>Lynx rufus baileyi</i>
Brown-headed cowbird	<i>Molothrus ater</i>
Bushtit	<i>Psaltiriparus minimus</i>
Canyon wren	<i>Catherpes mexicanus</i>
Cheatgrass	<i>Bromus tectorum L.</i>
Chukar Partridge	<i>Alectoris chukar</i>
Cliff swallow	<i>Petrochelidon pyrrhonota</i>
Common raven	<i>Corvus corax</i>
Coyote	<i>Canis latrans</i>
Creosote bush	<i>Larrea tridentata</i>
Creosote bush-saltbush	<i>Atriplex spp</i>
Desert cottontail	<i>Sylvilagus audubonii</i>
Gambel's Quail	<i>Callipepla gambelii</i>
Golden eagle	<i>Aquila chrysaetos</i>
Goodding's willow	<i>Salix gooddingii</i>
Gray vireo	<i>Vireo vicinior</i>
Hoary cress	<i>Lepidium draba</i>
House finch	<i>Carpodacus mexicanus</i>
Juniper titmouse	<i>Baeolophus ridgwayi</i>

Common Name	Scientific Name
Kit fox	<i>Vulpes macrotis</i>
Mallard	<i>Anas platyrhynchos</i>
Meadow Valley Wash desert sucker	<i>Catostomus clarki</i> ssp.
Meadow Valley Wash speckled dace	<i>Rhinichthys osculus</i> ssp.
Minnnows	<i>Cyprinidae</i> family
Mountain lion	<i>Puma concolor</i>
Mule deer	<i>Odocoileus hemionus</i>
Musk thistle	<i>Carduus nutans</i>
Osprey	<i>Pandion haliaetus</i>
Peregrine falcon	<i>Falco peregrinus</i>
Pie-billed grebe	<i>Podilymbus podiceps</i>
Pinyon jay	<i>Gymnorhinus cyanocephalus</i>
Ponderosa pine	<i>Pinus ponderosa</i>
Prairie falcon	<i>Falco mexicanus</i>
Quaking aspen	<i>Populus tremuloides</i>
Rainbow trout	<i>Oncorhynchus mykiss</i>
Red brome	<i>Bromus madritensis rubens</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Rip-gut brome	<i>Bromus diandrus</i>
Rock wren	<i>Salpinctes obsoletus</i>
Rocky Mountain elk	<i>Cervus elaphus nelsoni</i>
Russian knapweed	<i>Acroptilon repens</i>
Russian Olive	<i>Elaeagnus angustifolia</i>
Sagebrush	<i>Artemisia spp</i>
Sahara mustard	<i>Brassica tournefortii</i>
Say's phoebe	<i>Sayornis saya</i>),
Scotch thistle	<i>Onopordum acanthium</i>
Singleleaf pinyon	<i>Pinus monophylla</i>
Song sparrow	<i>Melospiza melodia</i>
Spotted towhee	<i>Pipilo maculatus</i>
Spotted towhee	<i>Pipilo maculatus</i>
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>
Tall whitetop	<i>Lepidium latifolium</i>
Tamarisk / Saltcedar	<i>Tamarix spp.</i>

Common Name	Scientific Name
Tamarisk leaf beetle	<i>Diorhabda elongata</i>
Turkey vulture	<i>Cathartes aura</i>
Utah juniper	<i>Juniperus osteosperma</i>
Water birch	<i>Betula occidentalis</i>
Western kingbird	<i>Tyrannus verticalis</i>
Western scrub-jay	<i>Aphelocoma californica</i>
White bursage	<i>Ambrosia dumosa</i>
White-throated swift	<i>Aeronautes saxatalis</i>
Wild Turkey	<i>Meleagris gallopavo</i>
Yellow warbler	<i>Dendroica petechia</i>

Appendices

Appendix A

Herbicide Treatments for Infestations

Cut-Stump Method:

- Trees would be initially downed using either hand or cross-cut saws.
- Wood slash would be scattered.
- The stumps would be painted with an herbicide mixture of triclopyr and basal oil.
- Backpack sprayers and pack stock may be used for transportation of herbicides.
- Initial treatments would use both water and kerosene based commercial formulations of triclopyr. The water based formulation was approved in December 2002 by the Environmental Protection Agency for aquatic use. It will be mixed with water or used undiluted for infestations located within 1 meter of water. The kerosene based formulation would be mixed at 1:3 ratios with 100% vegetable oil binding agents. Both herbicides would be applied by backpack sprayers. Non-toxic marking dye will be added to the solution to insure proper coverage.
- Chemical applications will not occur within 24 hours of forecasted rain.
- To minimize triclopyr vaporization, use will occur when air temperatures are between 60-90° F.
- Resprouts and new growth would be treated with a ground foliar application of a formulation of imazapyr.
- All standard operating procedures, mitigation, and conservation measures listed in the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic Environmental Impact Statement, which was signed in September of 2007, will be followed.

Low Volume Basal Bark Method:

- This method would only be used in non-aquatic situations.
- The lower 18 inches of the tree trunk would be painted with an herbicide mixture of triclopyr and basal oil.
- Backpack sprayers and pack stock may be used for transportation of herbicides.
- Initial treatments would use kerosene based commercial formulations of triclopyr. The kerosene based formulation would be mixed at 1:3 ratios with 100% vegetable oil binding agents. Herbicide would be applied by backpack sprayers. Non-toxic marking dye will be added to the solution to insure proper coverage.
- Chemical applications will not occur within 24 hours of forecasted rain.
- To minimize triclopyr vaporization, use will occur when air temperatures are between 60-90° F.
- Resprouts and new growth would be treated with a ground foliar application of a formulation of imazapyr.

- All standard operating procedures, mitigation, and conservation measures listed in the Record of Decision for the Vegetation Treatments Using Herbicides on BLM lands in 17 Western States Programmatic Environmental Impact Statement, which was signed in September of 2007, will be followed.

Low Volume Foliar Method:

- This method is usually applied in the early fall before the Tamarisk loses its foliage.
- Foliage would be sprayed with a herbicide mixture of imazapyr and water.
- Backpack sprayers and pack stock may be used for transportation of herbicides.

Appendix B

Wildlife Water Developments

➤ Inspections

All wildlife water developments encompassed by these wilderness areas require routine inspection. Inspections will be conducted annually by BLM wilderness staff with assistance from volunteers using non-motorized and non-mechanized means. During inspection, water storage levels, wildlife use, and major repair needs will be noted. Minor repairs may be made during these inspections and a report will be given to NDOW regarding the condition of each wildlife water facility.

➤ Emergency Maintenance and Minor Repair

From time to time, it may be necessary for NDOW to conduct over-flights and visual surveillance of water developments within the three wilderness areas in order to determine if emergency maintenance and/or minor repair of plumbing components such as tanks, drinkers, and pipes is required. If maintenance and/or repairs are needed, are judged to be critical for the survival of animals, and/or are needed to negate more costly repairs at a later date, a helicopter may land to conduct the needed maintenance or repair. Immediately after emergency maintenance and/or minor repairs are completed, NDOW will notify the BLM Ely District Manager with regard to: 1) the wilderness area visited, 2) the name of the water development and the location, and 3) the nature of the emergency maintenance or repair completed.

➤ Complex Maintenance and Repair

If a problem cannot be fixed during the over-flight of water developments and more complex or complicated maintenance and/or repairs are needed that require a subsequent visit to the site, NDOW may submit a written request to the Ely District Manager for permission to land a helicopter at the site for further maintenance and/or repairs. The following information must be provided in writing by NDOW to the Ely District Manager:

- Name of the wilderness area
- Name and location of the water development
- Identification of the problem and the maintenance and/or repairs needed
- Type of motorized and mechanized equipment desired
- Proposed dates of the maintenance/repair
- An estimate of the number of persons to be involved
- The estimated number of landings to be made

The Ely District Manager will respond to NDOW's written request within two weeks of receipt of the request. The District Manager will issue a public notification as a courtesy to the public, merely to provide the information contained in NDOW's request, not to solicit public review or comment. A MRDG will be completed by the Ely District as a means of documenting the analysis and evaluation of NDOW's request. It will not be necessary for the Ely District to complete a NEPA analysis or any decision documents, other than a letter of written authorization to NDOW with appropriate terms, conditions, and stipulations attached.

The effects of helicopter landings in the three wilderness areas are analyzed in the accompanying environmental analysis for this wilderness management plan. A report will be completed annually by the BLM Wilderness Planner to document all landings and motorized and mechanized equipment used to conduct complex maintenance and repairs.

➤ **Removal, Replacement, Modification and New Water Developments**

Should removal, replacement, or modification be required for existing wildlife water developments, or if new water developments are proposed, the Ely District Manager will follow the requirements for processing, analyzing and evaluating such proposals in the MOU with NDOW. The Ely District Manager will issue a public notification, prepare a MRDG, NEPA analysis, and appropriate decision documents as prescribed by BLM policy and procedure. Modifications to existing water developments may be made as long as the designed capacity and/or dimensions of the existing development are not exceeded.

Appendix C

Summary of existing water rights within wilderness.

The information contained in this table was obtained through the State of Nevada Department of Conservation and Natural Resources Division of Water Resources Water Rights Database. This list may not be complete or legally accurate but is presented as a general overview.

<i>Water Right Status and Permit Number</i>	<i>Use</i>	<i>Source</i>	<i>Township and Range</i>
Certificate Application Number-8553 Certificate Number-2062	Stock watering	Cottonwood Creek in Clover Mountains Wilderness	NE ¼ SW ¼ SEC 20 T07S R68E
Certificate Application Number-6493 Certificate Number-1499	Irrigation	Cottonwood Creek in Clover Mountains Wilderness	NE ¼ SW ¼ SEC 20 T07S R68E
Certificate Application Number-4338 Certificate Number-1569	Stock watering	Reservoir in Clover Mountains Wilderness	SW ¼ SW ¼ SEC 17 T07S R68E
Certificate Application Number-4339 Certificate Number-1570	Stock watering	Reservoir in Clover Mountains Wilderness	SW ¼ SW ¼ SEC 17 T07S R68E
Certificate Application Number-10662 Certificate Number-3404	Stock watering	Spring in Clover Mountains Wilderness	SW ¼ NW ¼ SEC 33 T06S R67E
Certificate Application Number-6396 Certificate Number-786	Mining and milling	Spring in Clover Mountains Wilderness	SE ¼ NE ¼ SEC 27 T06S R67E
Certificate Application Number-4340 Certificate Number-426	Stock watering	Ash Creek in Clover Mountains Wilderness	SE ¼ SE ¼ SEC 23 T06S R67E
Certificate Application Number-4341 Certificate Number-1571	Stock watering	Conger Spring in Clover Mountains Wilderness	NW ¼ NW ¼ SEC 18 T06S R68E
Reserved Application Number- R04311	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Spring in Clover Mountains Wilderness	NW¼ SE ¼ SEC 27 T07S R68E

<i>Water Right Status and Permit Number</i>	<i>Use</i>	<i>Source</i>	<i>Township and Range</i>
Reserved Application Number-R04313	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Fountain of Youth Spring in Clover Mountains Wilderness	NE ¼ SW ¼ SEC 17 T07S R68E
Reserved Application Number-R04328	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Spring in Clover Mountains Wilderness	SE ¼ SW ¼ SEC 08 T07S R68E
Reserved Application Number-R04329	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Spring in Clover Mountains Wilderness	NE ¼ SW ¼ SEC 07 T07S R68E
Reserved Application Number-R04335	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Spring in Clover Mountains Wilderness	SE ¼ NW ¼ SEC 12 T07S R67E
Reserved Application Number-R04327	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Spring in Clover Mountains Wilderness	NW ¼ NE ¼ SEC 07 T07S R68E
Reserved Application Number-R04335	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Spring in Clover Mountains Wilderness	SE ¼ NW ¼ SEC 12 T07S R67E
Reserved Application Number-R04320	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Oil Spring in Clover Mountains Wilderness	SE ¼ SW ¼ SEC 01 T07S R67E
Reserved Application Number-R04319	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Mudhole Spring in Clover Mountains Wilderness	NE ¼ SE ¼ SEC 06 T07S R68E
Reserved Application Number-R04330	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Spring in Clover Mountains Wilderness	NE ¼ SE ¼ SEC 05 T07S R68E
Reserved Application Number-R04331	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Spring in Clover Mountains Wilderness	SW ¼ NW ¼ SEC 04 T07S R68E
Reserved Application Number-R04318	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Spring in Clover Mountains Wilderness	SE ¼ SW ¼ SEC 33 T06S R67E
Reserved Application Number-R04299	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Quaking Aspen Spring in Clover Mountains Wilderness	NE ¼ NW ¼ SEC 2 T07S R69E

<i>Water Right Status and Permit Number</i>	<i>Use</i>	<i>Source</i>	<i>Township and Range</i>
Reserved Application Number- R04290	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	East Setting Spring in Clover Mountains Wilderness	NW ¼ NW ¼ SEC 01 T07S R69E
Reserved Application Number- R04312	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Grapevine Spring in Clover Mountains Wilderness	NW ¼ NE ¼ SEC 31 T06S R69E
Reserved Application Number- R04334	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Spring in Clover Mountains Wilderness	SE ¼ NW ¼ SEC 29 T06S R68E
Reserved Application Number- R04289	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Fife Spring in Clover Mountains Wilderness	NE ¼ SW ¼ SEC 14 T06S R68E
Reserved Application Number- R04341	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Fife Spring in Clover Mountains Wilderness	NW ¼ SW ¼ SEC 21 T06S R68E
Reserved Application Number- R04332	Claim Of Reserve Right Under Executive Order Of April 17, 1926 (PWR 107)	Spring in Clover Mountains Wilderness	SW ¼ SE ¼ SEC 7 T06S R68E
Vested Right Application Number- V01096	Stock watering	McLain Springs in Clover Mountains Wilderness	SW ¼ SEC 31 T07S R69E
Vested Right Application Number- V04346	Stock watering	Horse Spring in Clover Mountains Wilderness	N2 N2 SEC 34 T07S R68E
Vested Right Application Number- V01094	Stock watering	John Thomas Spring in Clover Mountains Wilderness	NE ¼ SEC 12 T07S R69E
Vested Right Application Number- R01100	Stock watering	Willow Springs in Clover Mountains Wilderness	NE ¼ SEC 12 T07S R69E
Vested Right Application Number- R04347	Stock watering	Cold Water Spring in Clover Mountains Wilderness	SW ¼ SW ¼ SEC 01 T07S R68E
Vested Right Application Number- R01097	Stock watering	Trail Springs in Clover Mountains Wilderness	SW ¼ SW ¼ SEC 03 T07S R69E

<i>Water Right Status and Permit Number</i>	<i>Use</i>	<i>Source</i>	<i>Township and Range</i>
Vested Right Application Number-R01102	Stock watering	East Springs in Clover Mountains Wilderness	SW ¼ NW ¼ SEC 01 T07S R69E
Vested Right Application Number-R01098	Stock watering	Oak Springs in Clover Mountains Wilderness	NW ¼ NW ¼ SEC 03 T07S R69E
Vested Right Application Number-R01103	Stock watering	Roeder Spring in Clover Mountains Wilderness	NW ¼ NE ¼ SEC 02 T07S R69E
Vested Right Application Number-R01099	Stock watering	Rock Springs in Clover Mountains Wilderness	SW ¼ SW ¼ SEC 34 T06S R69E
Vested Right Application Number-R01503	Stock watering	Rock Springs in Clover Mountains Wilderness	NW ¼ NW ¼ SEC 32 T06S R68E
Vested Right Application Number-R04348	Stock watering	Grapevine Springs in Clover Mountains Wilderness	NW ¼ NE ¼ SEC 31 T06S R69E
Vested Right Application Number-R04349	Stock watering	Willow Spring in Clover Mountains Wilderness	NW ¼ NW ¼ SEC 25 T06S R68E
Vested Right Application Number-R04350	Stock watering	Fife Spring in Clover Mountains Wilderness	NE ¼ SW ¼ SEC 14 T06S R68E
Vested Right Application Number-R01448	Stock watering	Elly Spring in Clover Mountains Wilderness	SW ¼ SW ¼ SEC 01 T06S R67E
Vested Right Application Number-R01113	Irrigation	Beaver Dam Creek in Clover Mountains Wilderness	SE ¼ NW ¼ SEC 32 T04S R71E

Appendix D

Descriptions of Primary Ecological Systems Present within Wilderness Areas

Great Basin Pinyon-Juniper Woodland

This pattern typically occurs on the dry mountain ranges of the Central Basin and Range ecoregion and the eastern foothills of the Sierra Nevada, typically at lower elevations ranging from 5200–8500 feet. These woodlands tend to be dominated by a mix of singleleaf pinyon (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*). Shrubs include multiple species of sagebrush (*Artemisia spp.*), mountain mahogany (*Cercocarpus spp.*), and grasses, such as bluebunch wheatgrass (*Pseudoroegneria spicata*), Idaho fescue (*Festuca idahoensis*), and needle-and-thread grass (*Hesperostipa comata*).

Great Basins Foothill and Lower Montane Riparian Woodland and Shrubland Plants

This plant association tends to occur as a variety of plant communities that consist of various shrubs dominated by trees. The plant associations found in this system depend upon stream gradient, floodplain width, and flooding events. In general, the dominant trees are white fir (*Abies concolor*) water birch (*Betula occidentalis*), and Goodding's willow (*Salix gooddingii*). The dominant shrubs may include red osier dogwood (*Cornus sericea*) and arroyo willow (*salix lasiolepis*). Grasses may include sedges (*Carex spp.*), rushes (*Juncus spp.*), and fowl managrass (*Glyceria striata*).

Great Basin Xeric Mixed Sagebrush Shrubland

This system is found on flats and plains, alluvial fans, rolling hills, rocky hillslopes, saddles, and ridges in the Great Basin from 3280–5300 feet elevation. Shrublands are dominated by black sagebrush (*Artemisia nova*), little sagebrush (*Artemisia arbuscula ssp.*). Wyoming big sagebrush (*Artemisia tridentata ssp. wyomingensis*) or yellow rabbitbrush (*Chrysothamnus viscidiflorus*) may be codominants. Other shrubs that may be present include shadscale saltbush (*Atriplex confertifolia*), jointfir (*Ephedra spp.*), goldenbush (*Ericameria spp.*), spiny hopsage (*Grayia spinosa*), bud sagebrush (*Picrothamnus desertorum*), greasewood (*Sarcobatus vermiculatus*), and horsebrush (*Tetradymia spp.*). Grasses composing the herbaceous layer may include Indian ricegrass (*Achnatherum hymenoides*), desert needlegrass (*Achnatherum speciosum*), Thurber's needlegrass (*Achnatherum thurberianum*), squirreltail (*Elymus elymoides*), or Sandberg bluegrass (*Poa secunda*).

Inter-Mountain Basins Big Sagebrush Shrubland

This vegetation type typically occurs in broad basins between mountain ranges, plains, and foothills in soils which are typically deep, well-drained, and non-saline. These shrublands are dominated by big sagebrush (*Artemisia tridentata spp.*), however scattered Utah juniper (*Juniperus osteosperma*), greasewood (*Sarcobatus vermiculatus*), and saltbush (*Atriplex spp.*) may be present in some stands. Yellow rabbitbrush (*Chrysothamnus viscidiflorus*) and mountain mahogany (*Cercocarpus spp.*) may be

codominate species in disturbed areas. Several grass species such as Indian ricegrass (*Achnatherum hymenoides*) or wild rye (*Leymus cinereus*) may be common.

Inter-Mountain Basins Montane Sagebrush Steppe

This ecological system includes sagebrush communities occurring at montane and subalpine elevations from 3280-9840 feet and is primarily composed of mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and related plants, as well as antelope bitterbrush (*Purshia tridentata*). Other common shrubs include snowberry (*Symphoricarpos* spp.), serviceberry (*Amelanchier* spp.), rubber rabbitbrush (*Ericameria nauseosa*), wild crab apple (*Peraphyllum ramosissimum*), wax currant (*Ribes cereum*), and yellow rabbitbrush (*Chrysothamnus viscidiflorus*). The herbaceous layer is abundant in most stands (over 25% cover), but also includes mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) shrublands. Common grasses include Idaho fescue (*Festuca idahoensis*), needle-and-thread grass (*Hesperostipa comata*), muttongrass (*Poa fendleriana*), slender wheatgrass (*Elymus trachycaulus*), Sandberg bluegrass (*Poa secunda*), and spike fescue (*Leucopoa kingii*).

Inter-Mountain Basins Semi-Desert Shrub Steppe

This ecological system occurs at lower elevations on alluvial fans and flats with moderate to deep soils. This semi-arid shrub steppe is typically dominated by grass species (>25% cover) with an open shrub layer. Characteristic grasses include Indian ricegrass (*Achnatherum hymenoides*), saltgrass (*Distichlis spicata*), and needle-and-thread grass (*Hesperostipa comata*). Woody species include four-wing saltbrush (*Atriplex canescens*), Greene's rabbitbrush (*Chrysothamnus greenii*), winterfat (*Krascheninnikovia lanata*), and broom snakeweed (*Gutierrezia sarothrae*).

Mogollon Chaparral

This system tends to dominate in the mid-elevation transition zone from the Mojave Desert into the mountains. It also occurs in foothills, mountain slopes, and canyons in drier conditions below oak and pine woodlands. Most chaparral species are adapted to fire. Species may include alderleaf mountain mahogany (*Cerocarpus montanus*), desert ceanothus (*Ceanothus greggii*), Stansbury cliffrose (*Purshia stansburiana*), and skunkbush sumac (*Rhus trilobata*)

Mojave Mid-Elevation Mixed Desert Scrub

This ecological system is generally found in the eastern and central Mojave Desert and on lower piedmont slopes in the transition zone into the southern Central Basin and Range ecoregion. The vegetation in this ecological system is diverse. Characteristic species include blackbrush (*Coleogyne ramosissima*), eastern Mojave buckwheat (*Eriogonum fasciculatum*), Mormon tea (*Ephedra nevadensis*), Mojave yucca (*Yucca schidigera*), and Joshua tree (*Yucca brevifolia*). Grass species may include Indian ricegrass (*Achnatherum hymenoides*), Sandberg bluegrass (*Poa secunda*), or big galleta (*Pleuraphis rigida*).

North American Warm Desert Bedrock Cliff and Outcrop

This vegetation pattern is found from subalpine to foothill elevations and includes barren and sparsely covered terrain (generally <10% plant cover) consisting of steep cliff faces with scree and talus slopes, narrow canyons, and smaller rock outcrops. There is a diverse

suite of species including elephant tree (*Bursera microphylla*), ocotillo (*Fouquieria splendens*), teddybear cholla (*Opuntia bigelovii*), various succulent species, and lichens.

Rocky Mountain Gambel Oak—Mixed Montane Shrubland

This shrubland is most commonly found along dry foothills, lower mountains slopes, often above pinyon/juniper woodlands. This association is typically dominated by Gambel oak (*Quercus gambelii*) or co-dominated with Saskatoon serviceberry (*Amelanchier alnifolia*), Utah serviceberry (*Amelanchier utahensis*) big sagebrush (*Artemisia tridentata*), alderleaf mountain mahogany (*Cercocarpus montanus*), and chokecherry (*Prunus virginiana*). Following fire, the density and cover of Gambel oak and serviceberry frequently increase.

Sonora-Mojave Creosotebush-White Bursage Desert Scrub

This desert scrub system is characteristic of the broad valleys, bajadas, plains, and low hills in the Mojave and lower Sonoran deserts. Creosotebush (*Larrea tridentata*) and white bursage (*Ambrosia bumosa*) are typically the dominant species, but many shrubs may co-dominate or form sparse understories in any given area. Associated species include four-wing saltbrush (*Atriplex canescens*), desert holly (*Atriplex hymenelytra*), brittlebrush (*Encelia farinose*), Mormon tea (*Ephedra nevadensis*), ocotillo (*Fouquieria splendens*), water jacket (*Lyceum andersonii*) and beavertail cactus (*Opuntia basilaris*). The understory is typically sparse but may be seasonally abundant with short-lived wildflowers. Herbaceous species such as sandmat (*Chamaesyce spp.*) and woolygrass (*Dasyochloa pulchella*), and desert trumpet (*Eriogonum inflatum*) are common.

Appendix E

RISK ASSESSMENT FOR NOXIOUS & INVASIVE WEEDS **Clover Mountains & Tunnel Spring Wilderness Management Plan** **Lincoln County, Nevada**

On March 24, 2009 a Noxious & Invasive Weed Risk Assessment was completed for the Clover Mountains and Tunnel Spring Wilderness Management Plan in Lincoln County, NV. This project provides the primary management guidance for the Clover Mountains and Tunnel Spring Wilderness. Proposed actions include the rehabilitation of unauthorized and former vehicle routes totaling 3.6 acres, the potential to construct vehicle staging areas to accommodate visitation, and the installation of signs and kiosks. The plan also guides the removal of structures, emergency stabilization and rehabilitation, and the management of weeds within the wilderness areas. Some proposed actions could temporarily disturb the ground but all actions would have a restoration component.

No field surveys were completed for this project. Instead, the Ely District weed inventory data was consulted. The only documented infestations within the Clover Mountains and Tunnel Spring Wilderness are Tamarisk (*Tamarax spp.*). These infestations occur at springs and along drainages in both wilderness areas. The following noxious and non-native, invasive species are found in the surrounding areas:

<i>Cirsium vulgare</i>	Bull thistle
<i>Conium maculatum</i>	Poison hemlock
<i>Lepidium draba</i>	Hoary cress
<i>Lepidium latifolium</i>	Tall whitetop
<i>Onopordum acanthium</i>	Scotch thistle
<i>Tamarix spp.</i>	Tamarisk
<i>Tribulus terrestris</i>	Puncturevine

While not officially inventoried the following non-native invasive weeds probably occur in or around both wilderness areas: red brome (*Bromus rubens*), cheatgrass (*Bromus tectorum*), Russian olive (*Elaeagnus angustifolia*), halogeton (*Halogeton glomeratus*), horehound (*Marrubium vulgare*), Russian thistle (*Salsola kali*), tumble mustard (*Sisymbrium altissimum*), and woolly mullein (*Verbascum thapsus*). The Clover Mountains Wilderness was last inventoried for weeds in 2007. The Tunnel Spring Wilderness was last inventoried in

Factor 1 assesses the likelihood of noxious/invasive weed species spreading to the project area.

None (0)	Noxious weed species are not located within or adjacent to the project area. Project activity is not likely to result in the establishment of noxious weed species in the project area.
Low (1-3)	Noxious weed species are present in the areas adjacent to but not within the project area. Project activities can be implemented and prevent the spread of noxious weeds into the project area.
Moderate (4-7)	Noxious weed species located immediately adjacent to or within the project area. Project activities are likely to result in some areas becoming infested with noxious weed species even when preventative management actions are followed. Control measures are essential to prevent the spread

	of noxious weeds within the project area.
High (7-10)	Heavy infestations of noxious weeds are located within or immediately adjacent to the project area. Project activities, even with preventative management actions, are likely to result in the establishment and spread of noxious weeds on disturbed sites throughout much of the project area.

For this project, the factor rates as Low (3) at the present time. The ground-disturbing actions that are proposed cover a relatively small area and would be implemented using hand tools. Site-specific treatment actions are proposed to control the infestations of Tamarisk and Russian olive scattered through drainages in both Wilderness. If weed populations expand to any new parts of the project area, the proposed Wilderness Management Plan provides active control and management procedures.

Factor 2 assesses the consequences of noxious weed establishment in the project area.

Low to Nonexistent (1-3)	None. No cumulative effects expected.
Moderate (4-7)	Possible adverse effects on site and possible expansion of infestation within the project area. Cumulative effects on native plant communities are likely but limited.
High (8-10)	Obvious adverse effects within the project area and probable expansion of noxious weed infestations to areas outside the project area. Adverse cumulative effects on native plant communities are probable.

For this project, the factor rates as High (8) at the present time. The consequences of noxious and invasive weed establishment in these wilderness areas can be evaluated by their effect on Wilderness character and the project’s vegetation communities. Currently, these Wilderness areas have few, small, and isolated weed infestations that generally do not deduct from the “natural condition” of these areas. Because the Wilderness Act requires Wilderness areas, “To be managed so as to preserve [their] natural conditions,” the consequences of the establishment and spread of noxious and invasive weeds to Wilderness character would be high. Several areas in the Wilderness areas may be prone to unnatural fire regimes and the subsequent, extensive spread of cheatgrass or red brome.

The Risk Rating is obtained by multiplying Factor 1 by Factor 2.

None (0)	Proceed as planned.
Low (1-10)	Proceed as planned. Initiate control treatment on noxious weed populations that get established in the area.
Moderate (11-49)	Develop preventative management measures for the proposed project to reduce the risk of introduction of spread of noxious weeds into the area. Preventative management measures should include modifying the project to include seeding the area to occupy disturbed sites with desirable species. Monitor the area for at least 3 consecutive years and provide for control of newly established populations of noxious weeds and follow-up treatment for previously treated infestations.
High (50-100)	Project must be modified to reduce risk level through preventative management measures, including seeding with desirable species to occupy disturbed site and controlling existing infestations of noxious weeds prior to project activity. Project must provide at least 5 consecutive years of monitoring. Projects must also provide for control of newly established populations of noxious weeds and follow-up treatment for previously treated infestations.

For this project, the Risk Rating is Moderate (24). This indicates that the project can proceed as planned as long as the following measures are followed:

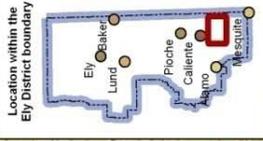
- During routine Wilderness monitoring, the presence of noxious and invasive species will be recorded, and followed with treatment as guided by the Management Plan. Clear

guidelines for managing and treating noxious and invasive weeds are stated in the proposed Management Plan.

- Where appropriate, vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities; for emergency fire suppression; or for authorized off-road driving will be free of soil and debris capable of transporting weed propagules. Vehicles and equipment will be cleaned with power or high pressure equipment prior to entering or leaving the work site or project area. Vehicles used for emergency fire suppression will be cleaned as a part of check-in and demobilization procedures. Cleaning efforts will concentrate on tracks, feet and tires, and on the undercarriage. Special emphasis will be applied to axels, frames, cross members, motor mounts, on and underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out and refuse will be disposed of in waste receptacles. Cleaning sites will be recorded using global positioning systems or other mutually acceptable equipment and provided to the Ely District Office Weed Coordinator or designated contact person.
- All straw, hay, straw/hay, seed, or other organic products used for reclamation or stabilization activities must be certified that all materials are free of plant species listed on the Nevada noxious weed list or specifically identified by the Ely District Office.
- Keep removal and disturbance of vegetation would be kept to a minimum through construction site management (e.g. using previously disturbed areas and existing easements, limiting equipment/materials storage and staging area sites, etc.)

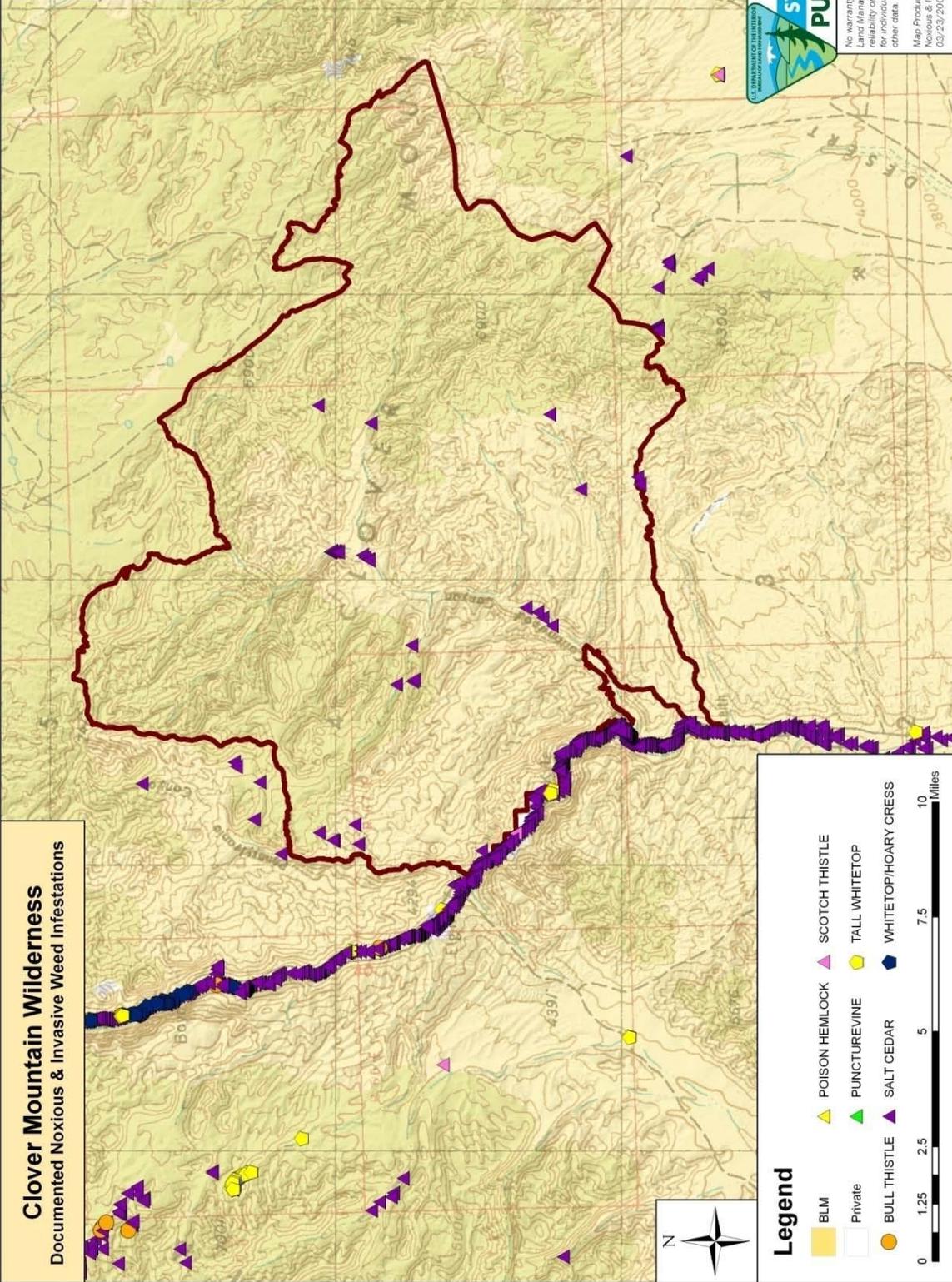
Reviewed by: _____
Bonnie M. Million
Ely District Noxious & Invasive Weeds Coordinator

3/24/2009
Date



No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data.

Map Produced by: Bonnie M. Millon
 Noxious & Invasive Weeds Specialist
 03/29/2019



Clover Mountain Wilderness
 Documented Noxious & Invasive Weed Infestations

Legend

- BLM
- ▲ POISON HEMLOCK
- ▲ SCOTCH THISTLE
- Private
- ▲ PUNCTUREVINE
- ▲ TALL WHITETOP
- BULL THISTLE
- ▲ SALT CEDAR
- ◆ WHITETOP/HOARY CRESS

0 1.25 2.5 5 7.5 10 Miles

